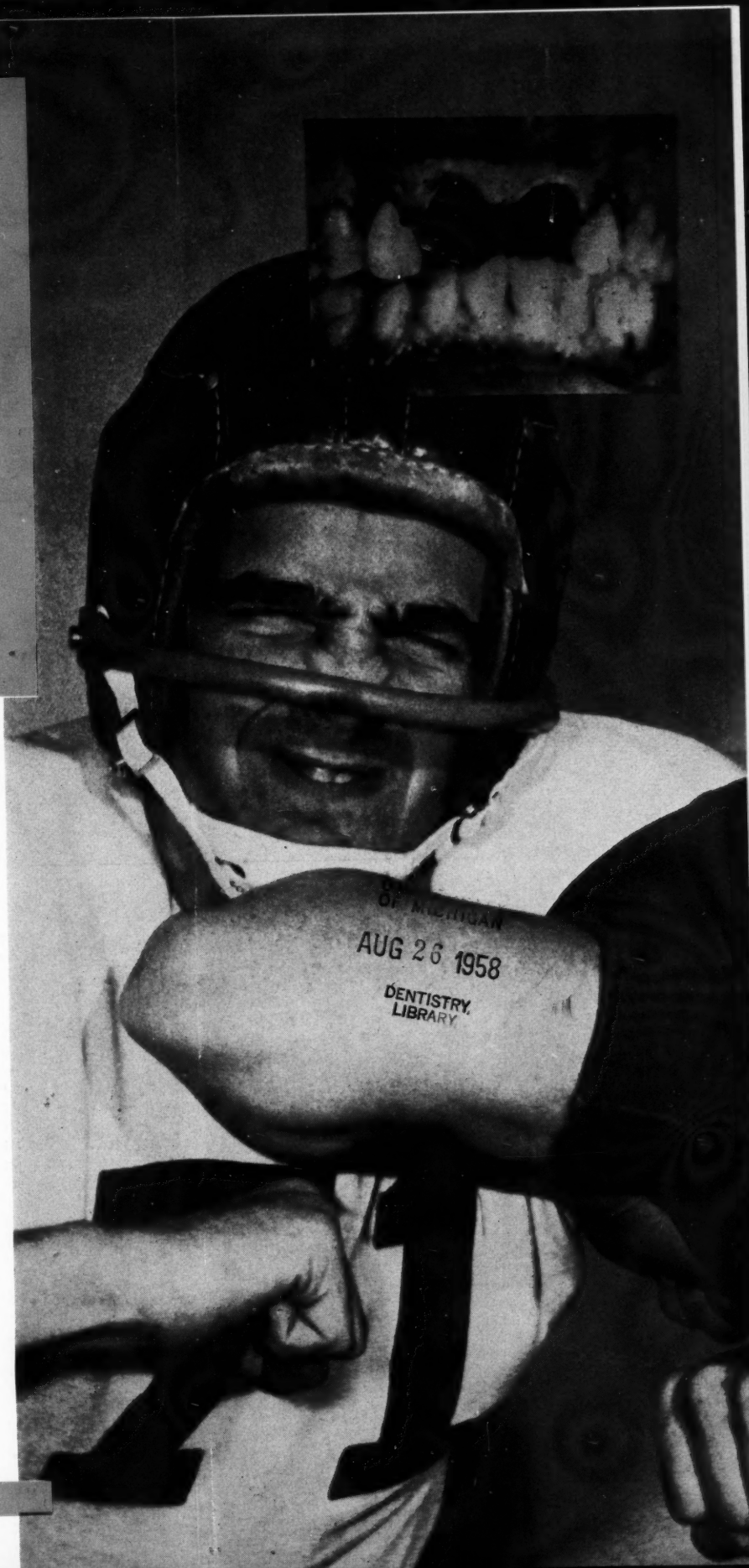


Dental Digest

August 1958

IN THIS ISSUE

323	Orth Protection For Contact	
317	ports	338
327	Operative Dental Pain	
	reated by Leritine®	342
285	New Retainer and a New Ma-	
	ix Strip for Anatomic Tooth	
	estorations	334
292	ervation on the Anatomy of	
	he Superior Dental Nerves	
292	(An Abstract)	348
	Investigation of Neuropatholog-	
	Manifestations of Oral Tis-	
289	ses: Inheritance and Emo-	
290	on as Related to Tooth	
	tructure Breakdown—Part	
	ree	349
291	Editor's Page	353
317	ical and Laboratory Sug-	
	estions	354
290	icine and the Biologic	
	iences	356
	al Reactions to Penicillin	
	(An Abstract)	360
	tra-Angles	361
285	(A Complete Table of Contents	
286	Appears on page 337)	
324	Cover illustration—Cathcart	
	article, page 338	





UNIVAC[®]

LIFELUCULENT PORCELAIN ANTERIORS

exquisite beauty...

IN A PORCELAIN FOR PERFECTIONISTS



Univac Lifeluculent Porcelain . . . dense, voidless,
strong . . . fired in specially designed
Univac Vacuum furnaces, fully and accurately
controlled by modern electronic devices.

Biologic in function and mechanical in form and design.

Fully anatomic in appearance.

Can be set to a curved or flat occlusal plane.

Balanced occlusion accurately and readily achieved.

Adjustments at chair minimized

Maximum chewing efficiency and comfort for patient.

Write for Technique and Mold Chart

UNIVAC[®] BIO-MECHANICAL[®] POSTERIOR

ASSURED OCCLUSAL BALANCE MINIMIZES ADJUSTMENTS AT THE CHAIR

MECHANICAL
IN DESIGN . . .
. . . ANATOMIC IN
APPEARANCE



Dental Digest

Vol. 64, No. 8

Registered in U.S. Patent Office

AUGUST 1958

About Our CONTRIBUTORS

JACK F. CATHCART, D.D.S. (University of California, College of Dentistry, 1926) who has been a regular contributor to *DIGEST* since 1947 has been interested in the prevention of injuries to participants in sports of various kinds and has published previously on this subject. His current article, *MOUTH PROTECTOR FOR CONTACT SPORTS*, was originally presented before the Santa Clara County Medical Athletic Injury Clinic, at Stanford University, December 1957.

HARRY L. LEVIN, Capt. (DC) USNR (The Thomas W. Evans Dental Institute, University of Pennsylvania, 1927) has published extensively in medical and dental journals. For his second appearance in *DIGEST* he presents *POSTOPERATIVE DENTAL PAIN TREATED BY LERITINE®*.

DAVID REITER, D.D.S. (School of Dental and Oral Surgery, Columbia University, 1924) is engaged in the practice of general dentistry. Doctor Reiter has done research in surgery and operative dentistry for thirty years and has published several articles on dental subjects. His first *DIGEST* article is a *NEW RETAINER AND NEW MATRIX STRIP FOR ANATOMIC RESTORATIONS*, in the current issue.

NEWTON WILLIAM MELLARS, D.D.S. (College of Physicians and Surgeons, School of Dentistry, San Francisco 1921) and his co-author, **FREDERICK WILLIAM HERMS, D.D.S.** (College of Physicians and Surgeons, School of Dentistry, San Francisco, 1906) present the third installment of their four-part report on a research project, *INVESTIGATION OF NEUROPATHOLOGIC MANIFESTATIONS OF ORAL TISSUE*.

Mouth Protection For Contact Sports <i>Jack F. Cathcart, D.D.S.</i>	338
Postoperative Dental Pain Treated by Leritine® <i>Captain Harry L. Levin (DC) USNR</i>	342
A New Retainer and a New Matrix Strip for Anatomic Tooth Restorations <i>David Reiter, D.D.S.</i>	344
Observation on the Anatomy of the Superior Dental Nerves (An Abstract) <i>M. J. T. Fitzgerald, M.B., B.Ch., and James H. Scott, D.Sc., M.D., L.D.S.</i>	348
Investigation of Neuropathologic Manifestations of Oral Tissue: Inheritance and Emotion as Related to Tooth Structure Breakdown— Part Three <i>Newton W. Mellars, D.D.S., and Frederick W. Herms, D.D.S.</i>	349
The Editor's Page	353
Clinical and Laboratory Suggestions 1. Prevent Scattering of Amalgam; 2. Preventing Wax Distortion; 3. Saving Carbide Burs; 4. Adjusting Bitewing Films; 5. Increasing the Adhesive Quality of a Powder Medication; 6. Molding Baseplates.	354
Medicine and the Biologic Sciences	356
Fatal Reactions to Penicillin (An Abstract) <i>Major Vernon M. Smith, M.D.</i>	360
Contra-Angles	361

EDWARD J. RYAN, B.S., D.D.S., Editor
WANDA T. PICKARD, B.A., Assistant Editor
708 Church Street, Evanston, Illinois

Copyright, 1958, by Dental Digest, Inc. See page 334 for subscription data, etc.
The magazine is mailed on the fifteenth of the month of issue.

MOUTH PROTECTION

for Contact Sports

JACK F. CATHCART, D.D.S., Berkeley, California

DIGEST

An eight-year study on high school football players at Berkeley, California, which is in agreement with the statistics compiled from a national survey of high school football injuries, offers the conclusion that concussion, dental, and mouth injuries can be prevented in contact sports with the use of a mouth protector. The author of this article has been closely associated with this problem and has presented two previous reports on the subject in DIGEST. This article describes an improved device which has been used successfully for the prevention of injuries in the region of the face and head in contact sports.

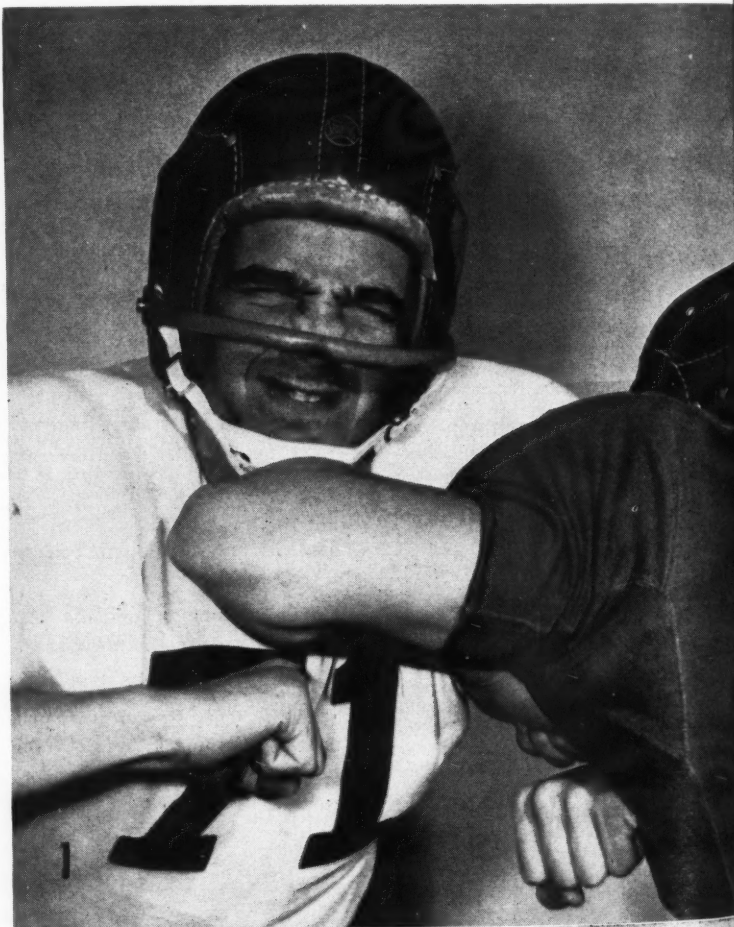
Percentage of Injuries

It is stated in the handbook of the National Federation of State High School Athletic Associations that in the past more than 53 per cent of the injuries incurred were face and dental injuries in high school football activities; of these, 56 per cent occurred during game play and the remainder during practice scrimmage.

Football Popular Sport—Essentially a game of bodily contact between the players, football is one of the most popular school sports. Because of this body contact there are bound to be numerous injuries to the players, especially in the case of boys just learning the game who are at an awkward stage of the teens where muscular strength is not properly coordinated

Protective Measures—To prevent bodily injuries strict rules of play have been made and protective equipment devised for the players in the form of helmets, shoulder pads, and other appliances which the high school usually furnishes.

Face and Teeth Accessible to Injury—The 53 per cent rate of injury to the face and teeth has presented a problem in protection because of the obvious vulnerability of this region in addition to anatomic variations of specific detail not found in other areas of the body. Moreover, while a sprained joint or a broken bone will



1. Contact play. Elbow blow to chin showing that a face bar or mask alone without the mouth protector will not prevent a dental injury.

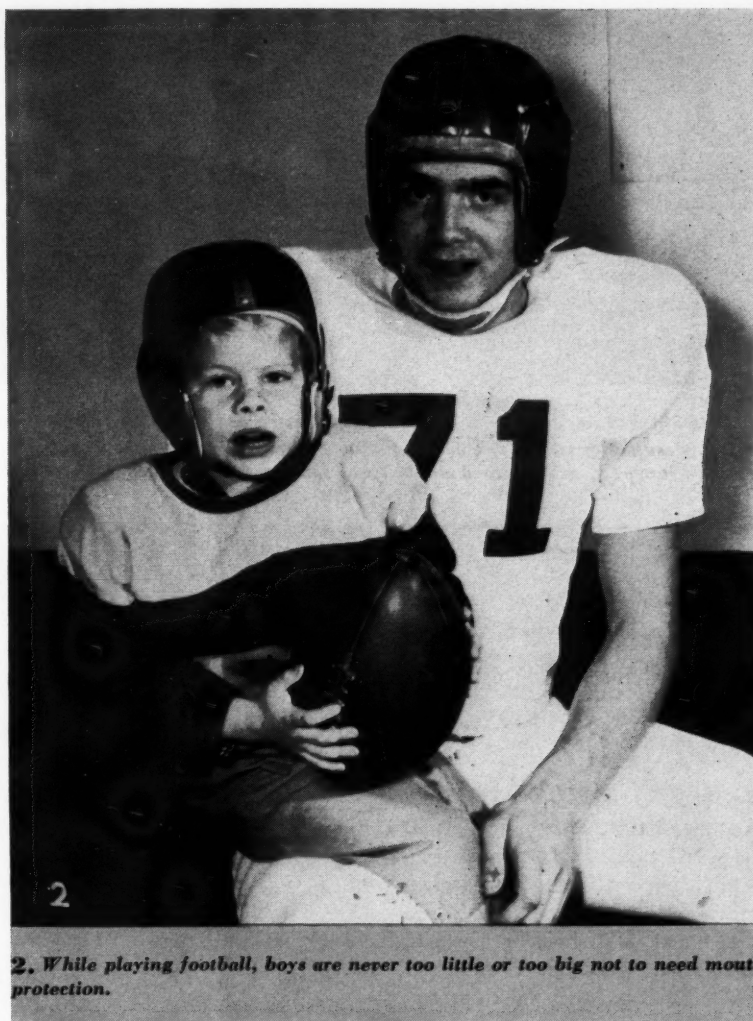
eral, a broken or lost tooth or teeth requires an artificial restoration.

Injury Prevention Methods Studied

Extensive investigation has been in progress during the past eight years on the problem of face and dental injury prevention. The result of this interest in injury prevention has been encouraging. Numerous types of face masks and mouth protectors have been devised and used with gratifying success.

Face Mask Helpful—For example, the Wisconsin Interscholastic Athletic Association completed a survey demonstrating that of 15,714 boys participating, 57 per cent (8,993) wore masks of five different types, and 43 per cent (6,712) did not wear masks. Less than 2 per cent (183) of the boys wearing masks were injured in the face or the mouth; thus, the conclusion may be drawn that a face mask worn by a player reduces the hazard of a face or mouth injury by 61 per cent.

Additional Prevention Required for Tooth Injuries—Injury records indicate that 1 per cent or 10 boys per thousand receive broken noses in an average high school football season. The wearing of a face mask reduces the possibility about 8 times or 1 1/3 boy per thousand. In this study, however,



2. While playing football, boys are never too little or too big not to need mouth protection.



3. Broken or chipped incisors are difficult dental restorations to make when the victim is in his early teens.

masks proved to be least effective in preventing chipped or broken teeth: 121 tooth injuries to boys wearing masks as against 167 dental injuries to boys without this protection.

Mouth Protector and Mask Required—In order to provide maximum protection to the teeth and prevent concussions, it is necessary for a player to wear a mouth protector in addition to a mask. Studies of the manner in which tooth and dental injuries plus concussions occur indicate that they are most frequently the result of a blow under the chin, and that area is not adequately protected by a mask.

Importance of Fit—The study also demonstrated that to be effective protective equipment, especially the helmet and mask, must fit properly. It



4. It is difficult for a football coach to explain an injury to the parent especially if the parent becomes aware that a mouth protector could have prevented the accident.



5. Now a dental cripple; voted the most courageous football player on his college team 1950, B. M. P. A. (before mouth protection available).

was shown in several cases that proper attention is not always given to the problem of fit. There was evidence that the equipment that fits improperly is a hazard to the wearer rather than a protection for him.

Requirements for Efficient Mouth Protector

To design an adequate mouth protector it is necessary to consider exactly what a mouth protector is and what functions it should perform to provide maximum benefit.

(1) *Description*—A mouth protec-



6. A knee in the chin is a shock that only a mouth protector can absorb, and one that a face bar or mask will not prevent.



7. Sectional view. Illustration shows how any mouth protector acts as a shock absorber, preventing teeth from coming together and, also, lessening the chance of transmitting the force of blow through the condyle to the fossae, the cause of concussion or knockout.

tor is a piece of soft, pliable, shock-absorbing material of rubber or plastic composition which fits in the mouth over the upper teeth and gums and which, upon closing of the jaws, should come down over the lower teeth. It should be of sufficient thickness to protect the lips from the teeth and the upper teeth from hitting against the lower teeth.

(2) *Function*—(a) It holds the jaws apart and, because of its soft elastic composition, acts as a shock absorber, preventing the upward and backward displacement of the condyle in its articulating fossae. (b) It there-

8. Shur-Fit. Soft, wintergreen-flavored, vinyl plastic.
9. Shur-Fit. Stays in place with mouth open to breathe or to call signals.
10. Shur-Fit. Comes down over lower teeth when mouth is closed to protect lips from teeth.

by prevents the severe concussion or possible cerebral hemorrhage which might result from a hard blow on the jaw, which could cause a fatality. (c) It prevents the upper teeth from hitting against the lower teeth as a result of a blow upon the teeth or jaw, preventing chipping or breaking of the teeth. (d) The mouth protector prevents the lateral displacement of the mandible, which could result in dislocation or fracture of the mandible. (e) It prevents split lips or cut cheeks by holding them away from the underlying teeth which it covers, especially true if they are irregular, protruding, or have prosthetic or orthodontic appliances attached to them.

(3) *The Ideal Mouth Protector*—It should be worn comfortably, stay in position and should provide adequate protection. It is especially important that it cannot be displaced by a blow or upon opening the mouth which is necessary during heavy exercise to obtain additional air.

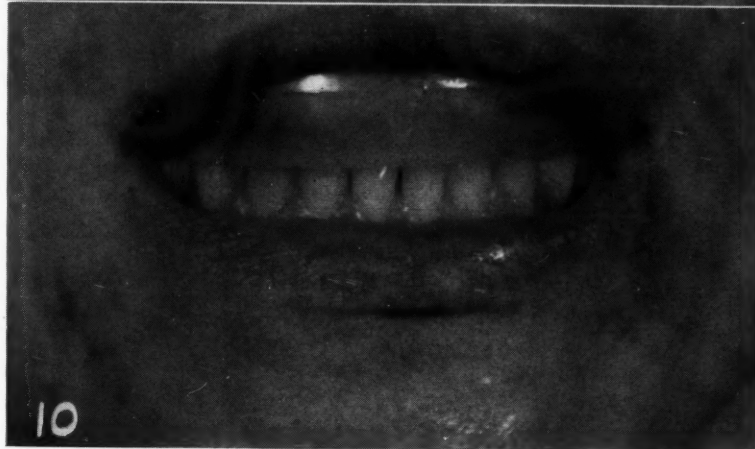
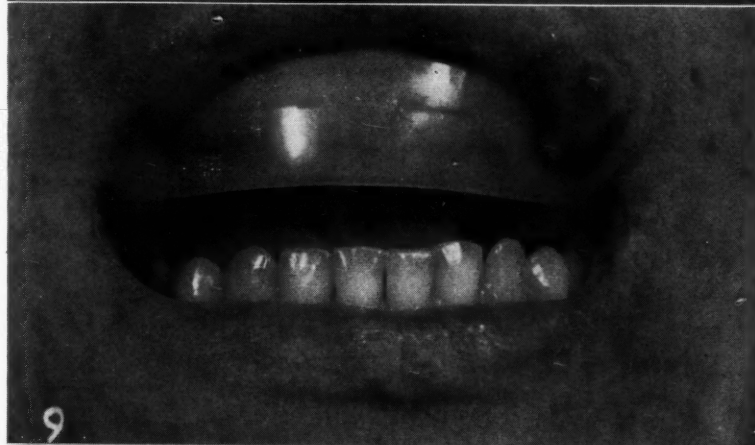
Protection Recommended

It is because of the problem of proper fitting that mouth protectors have not been made mandatory to be worn by high school players, although the use of a mouth protector is recommended in the National Interscholastic Federation rule book.

In a special report to California high schools by Willard B. Knowles, California's representative on the National Federation Football Rules Committee, it was suggested that a mouthpiece should be used by all players. Although face protectors are useful, experience has shown that the mouthpiece almost completely eliminates injury to teeth and reduces notably the injuries to the soft tissue of the head. No boy should play football without using a mouthpiece.

Conclusion

It is believed that a new conception



of the mouth protector just coming on the market, which is made of a soft, clear, wintergreen-flavored vinyl plastic in one size to fit any mouth through a mechanical grip and selling for approximately \$1.35 to schools, will fill the strong need for proper

mouth protection in contact sports. Only when adequate protection is available at a price which allows every boy to obtain it, will the use of a mouth protector be made mandatory for high school football play.

701 American Trust Building

Postoperative DENTAL PAIN

Treated by Leritine®

Captain HARRY L. LEVIN (DC) USNR, Natick, Massachusetts

DIGEST

An analgesic may be defined as a substance which through its action upon the nervous system serves to reduce or abolish pain without producing unconsciousness. This article presents a report on the clinical trials of a new synthetic analgesic agent, anileridine dihydrochloride. The trade name, Leritine®, is used in describing this new agent which has proved to be a potent analgesic with high oral activity and relatively mild side effects. The results of applications of the agent in fifty patients who had undergone similar dental surgery are presented.

General Considerations

In animals Leritine approaches the analgesic potency of morphine and is several times more potent than meperidine (Demerol®). It has a prompt onset of action (15 to 30 minutes) and long duration of analgesia (5 to 6 hours).

Side Reactions—The side reactions such as (1) general depression, (2) depression of respiration, and (3) lowering of blood pressure are considerably milder than those produced by morphine, and somewhat milder than those of meperidine.¹

Drug Well Tolerated—Leritine does not produce nausea, vomiting, or constipation. Subacute and chronic toxicity tests indicate that it is well

tolerated upon repeated administration.

Treatment for Mild Symptoms—In the average case of dental surgery, postoperative pain is usually mild, and drugs like aspirin and aspirin compounds respond favorably in its control. For many years codeine alone or in combination with aspirin, phenacetin, and caffeine has been used for relief of moderate pain.

Limitations of Anesthetic Combinations—Piper and his associates² point out the limitations of codeine and codeine combinations, and emphasize the weakness of their effects: "It takes considerable time for these medications to take effect, especially when administered by mouth. The duration of action is often short, and relief of pain is not always adequate, particularly in cases of acute pain."

Potent Analgesic Sometimes Required—There are occasions, particularly in postoperative dental situations, where a more potent analgesic is needed.

Case Reports

The results of the following cases are shown in Table 1.

Case 1—A seaman 28 years of age, well nourished, reported to the dental office for treatment. He was obviously in acute distress from severe postoperative pain, as a result of an autogenous tooth transplant. The combination of codeine ½ grain and 10 grains of aspirin in periodic doses failed to give relief. Administration of Leritine in 25-milligram doses brought prompt and lasting relief.

Case 2—A 32-year-old marine ser-

geant reported to the dental clinic complaining of marked pain because of a recent extraction and relocation of a third mandibular molar tooth in the lower right side.

Examination: A rather clean socket of a third mandibular molar tooth recently extracted was observed. This tooth was transplanted into the socket of a first mandibular molar tooth of the same side. The tooth was wired into position, but the mucous membrane and surrounding periodontium became inflamed and extremely tender to touch. The physical condition of the patient was good except for the extreme pain.

Treatment: Three doses of codeine ½ grain and aspirin 10 grains failed to bring relief. After the second dose of Leritine, administered 4 hours after the initial dose, the patient obtained satisfactory relief.

Case 3—A warrant officer 38 years of age reported to the dental service after an autogenous tooth transplant, the third in this series. There was marked postoperative pain. As in the preceding two cases, relief was obtained after the administration of Leritine in 25-milligram doses. The pa-

The opinions or assertions contained in this article are those of the author and are not to be construed as official or reflecting the view of the Navy Department or the Naval Service at large.

Author's Note: The Leritine used in this study was supplied through the courtesy of Lyon P. Strean, D.D.S., Ph.D., of Merck, Sharp & Dohme, Research Laboratories, West Point, Pennsylvania. Thanks is extended to Doctor Strean for his helpful suggestions and criticisms.

¹Strean, Lyon P.: Correspondence, Merck, Sharp & Dohme, Research Laboratories, West Point, Pennsylvania.

²Piper, C. E., and Nicklas, F. W.: Percodan for Pain in Industrial Practice, *Indust. Med. & Surg.* 23:512 (Nov.) 1954.

patient complained of lethargy, but this was considered desirable since the patient had 7 hours of restful sleep.

Adjunctive Therapy: There was no further evidence of pain except for some edema which was substantially reduced on the next day under adjunct therapy of ice packs, applied intermittently at 15-minute intervals.

Recovery Uneventful: The patient returned to work after 48 hours of hospitalization.

Case 4—A 16-year-old student had an embedded right third mandibular molar tooth removed for orthodontic reasons. His general physical condition was good and noncontributory. His chief complaint was that of severe pain.

Examination: A healthy socket with a well-formed blood clot was present. A rather long incision of the mucous membrane extended to the mucobuccal fold.

Effect of Treatment: Leritine, after 20 minutes, gave relief, which was soon followed by a deep and refreshing sleep.

Additional Surgery: A similar surgical procedure was performed on the left side of the mandible for the removal of a nonerupted third mandibular molar tooth six weeks later. Similar manifestations of pain appeared to be less severe. Administration of Leritine brought relief after 30 minutes.

Case 5—A 33-year-old woman requested relief for acute postoperative pain as a result of an extraction. The patient was disturbed and obviously suffering considerable pain.

Previous Medication: She admitted taking about a dozen aspirin tablets without relief.

Physical Condition: The patient was extremely thin and appeared apprehensive.

Relief Obtained: Leritine, in several 25-milligram doses, gave her satisfactory relief, but she complained of retching and vomiting afterwards.

Possible Cause of Side Reactions: The excessive use of the aspirin within a space of a few hours might have been the cause of this side reaction.

Case 6—A Negro, 24 years of age,

TABLE I
Results of Trial of Leritine on 57 Dental Surgical Patients

Number of treated patients—57

Age Group—(16-48)

Amount of drug given per dosage—25 milligrams

Route administered—orally

Relief of pain	Excellent	30
	Satisfactory	12
	Fair	10
	Uncertain	5
Undesirable effects	Constipation	2
	Nausea	2
	Vomiting	1
	Dizziness	2
	Euphoria	1
	Lethargy	17

The control group consisted of 50 patients who had undergone similar dental surgery; postoperative pain was treated with aspirin, codeine and aspirin, phenacetin, and caffeine. Control of pain with these agents was somewhat ineffective in the majority of cases when the pain was severe.

presented for the removal of an impacted left third mandibular molar. Due to the hardness and density of the cortical bone, considerable trauma followed. As a consequence there was unpleasant postoperative sequelae: (1) severe pain, (2) cellulitis, (3) a mild rise in temperature, 101.5 degrees Fahrenheit, and (4) malaise. Codeine in combination with aspirin, phenacetin, and caffeine gave no relief.

Effective Use of Leritine: Twenty minutes after the administration of 25 milligrams of Leritine the painful manifestations subsided.

Additional Medication: The patient was also given antibiotics, penicillin 300,000 units per cubic centimeter, together with 0.5 gram streptomycin.

Adjunctive Therapy: Application of an ice pack at 15-minute intervals along with warm saline irrigations were used as adjunctive therapy.

Treatment Continued: After a second dose of Leritine, 4 hours later, the patient fell asleep. He had not slept for 24 hours prior to this time. This treatment was continued for three days, after which time little swelling remained. The patient was able to return to work. Recovery was uneventful.

Cases 7 to 40—These were similar to the series of cases reported in that pain was predominant as a result of dental surgery.

Types of Cases Treated: Among this group were two apicoectomies, five alveolectomies, several cases of pulpitis, many of pericementitis aggravated by Vincent's gingivitis, two mucocoele removals, two leukoplakia removals, and the remainder with various postoperative sequelae.

Treatment Routine Established: A regimen of Leritine gave satisfactory relief in twenty-five cases after one or two doses. The second tablet was prescribed to be taken after six hours. Moderate relief was obtained in five cases and failure to bring relief in three cases.

Conclusion

Within the past two years the new synthetic analgesic agent, Leritine, has been developed and tried in over 600 medical cases and in 57 patients who had received dental treatment. The following conclusions seem justified:

1. Leritine has a wider range of analgesic potency than the other analgesics.

(Continued on page 348)

A New Retainer and a New Matrix Strip

for ANATOMIC TOOTH RESTORATIONS

DAVID REITER, D.D.S., Woodside, Long Island, New York

DIGEST

This report is the result of ten years' search for an ideal universal matrix for anatomic tooth restorations. Many mechanical devices and many techniques for custom made matrixes have been available to the dentist for completion of amalgam restorations. In addition, copper bands, separators, wedges, modeling compound, staples, and a multitude of prefabricated bands are utilized. The author has combined this armamentaria in one all-purpose retainer and one type of all-purpose matrix material. Step-by-step directions are given for the use of the device.

Advantages of Device

Essential factors in successful amalgam restorations are (1) thorough trituration, (2) complete expulsion of free mercury, (3) no contamination, and (4) heavy condensation. The device described here is useful as an aid in achieving successful amalgam restorations. Some of the advantages of the device are the following:

1. To obtain perfect constriction at the gingiva and flaring and looseness at the occlusal, a number of new moving parts have been added to the retainer.

2. The retainer is designed so that a single thumb nut simultaneously locks and tightens the matrix strip or band around the tooth. It constricts the matrix at the gingiva and forms a flare occlusally to permit shaping the matrix for contour and contact.

3. The conventional screw clamp

is eliminated, so that the matrix material is never torn or mutilated.

4. The matrix strip cannot slip out; it is retained by stops.

5. Elbow action of the retainer permits clearance of anterior teeth even when the retainer is mounted on malposed posteriors.

Procedure

Turn the thumb nut to the left as far as it will go to bring all parts of the retainer to starting position. For molars, cut a length of matrix strip equal to the length of the retainer, or select a band of desired size. For bicusps, cut a strip about $\frac{1}{2}$ inch shorter.

1. Bring the free ends of the strip or band together and thread them into the retainer from the bottom, passing first through one of the slots in the swivel head, then through the slot in the oscillating plate.

2. Turn the thumb nut to the right until a loop of the desired size is obtained. Cut off excess free ends if necessary.

3. Place the loop on the tooth and tighten by turning the thumb nut to the right, at the same time pressing down on the loop with the left finger to force it subgingivally, until the retainer is locked securely. Burnish gingivally for perfect adaptation, and tighten with one more turn on the thumb nut.

4. After the restoration is completed, remove the retainer. (1) Push down on the retracting top plate handle, and pull the plate back as far as it will go; this frees the ends of the matrix strip. (2) Turn the thumb

nut to the right until the free ends of the strip are straightened; hold the strip against the tooth with a finger and slide the retainer off the strip. (3) Slide the strip out interproximally.

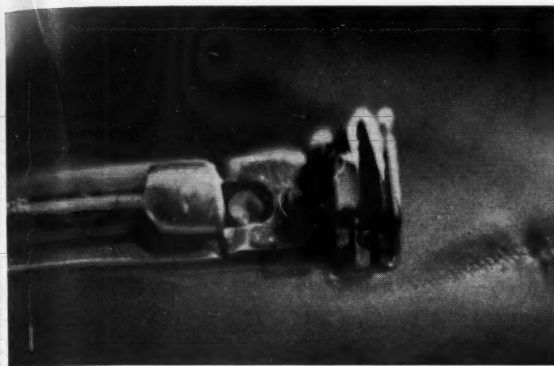
Technical Requirements In Successful Restorations

Failure to adhere (1) to the principle of no overhang at the gingiva, (2) proper contour, and (3) occlusal contact will result in faulty tooth restorations. The result of imperfect technique is the prevailing abundance of periodontal disturbances and rampant caries, despite the improvement in oral hygiene and the increased demand for dental treatment.

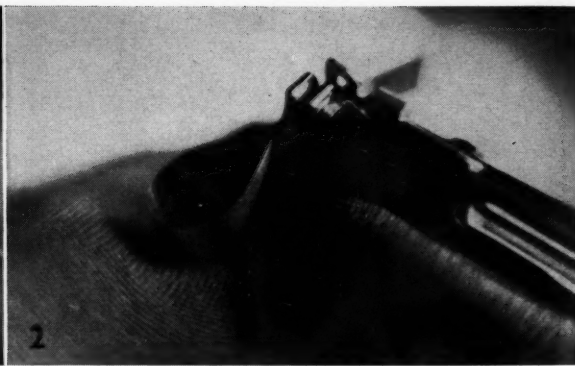
Aid in Ideal Technique—To meet the ideal requirements the retainer has a tilting N-shaped head, having two V slots. It can thus be mounted buccally or lingually and still have the closed end at the gingiva where constriction is desired. The open end of the slot in use points occlusally and spreads on tension to allow for flaring and looseness so that the proximal surface of the matrix strip can be contoured toward the adjacent teeth. This will create the contour and contact of the restoration in harmony with the adjacent teeth.

Double V-Slots—The swivel head has double V-slots; always use the slot which will have its closed end at the gingiva when the retainer is installed on the tooth.

Laceration Prevented—The jaws of the retainer are angled but a step is made to avoid laceration of the gingival crest. Angled sides help to lock at the gingiva and create a flaring toward the occlusal. The loop of the



1. Head of the retainer that comes in direct contact with the tooth surface. Two V-slots permit labial or lingual mounting on any tooth and still keep the closed end of the slot at the gingiva, where constriction is desired. The open end of each slot is always placed occlusally where it opens on pressure to create a flare for the greater diameter. Extremities of the head are recessed to prevent impingement on the gingival crest. The contacting walls of the head of the retainer have



flaring sides to grip instantly at the gingiva and flare toward the occlusal.

2. The two free ends of the strip are held together and threaded through one of the slots selected. The thumb-nut is turned clockwise until the proper sized loop or circle is obtained. Excess free ends are cut off to prevent laceration of soft tissues.

strip can be tilted toward the closed end or gingival part of the retainer head to avoid cutting across the gingival crest, or when 7/16-inch strip is used it can be trimmed to prevent lacerations, especially in the case of subgingival cavities.

Controlled by One Thumb Nut—All parts of the retainer are controlled by one thumb nut. Turning the thumb nut to the right moves the oscillating plate back so the free ends fold over to prevent slipping and up to twenty pounds of tension can be obtained. As pressure is applied the oscillating plate will turn to pull hardest around the smallest circumference of a tooth. The tilting movement of the head will assume the angle of the tooth surface upon which it is mounted.

Lingual Mounting Permitted—In addition there is an elbow action to permit lingual mounting and yet clear the anterior teeth to eliminate the interference that is usually encountered.

Selection of Matrix Strip—The operator selects a matrix strip wide enough to extend below the cervical margin and above the proximal ridges.

Matrix Burnished at Gingiva—In oddly shaped teeth, ovoid, malposed, or deciduous teeth the matrix strip can be burnished at the gingiva and an added turn given to increase ten-

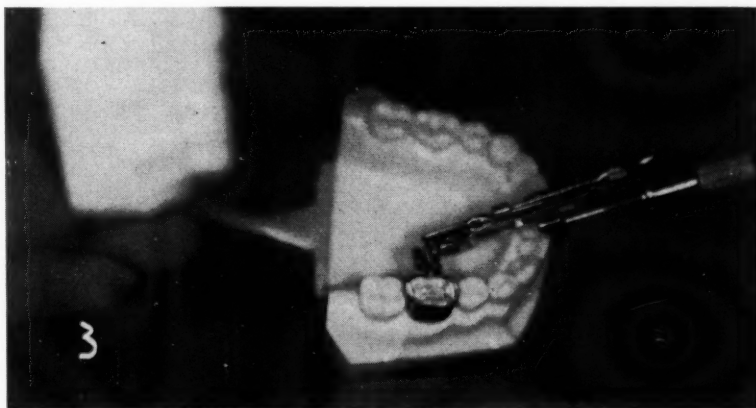
sion. Insertion of a wedge will give added security. An instrument has been designed to grip and make the insertion of interproximal wedges with greater ease and accuracy. The small thumb nut controls the action which is similar to a vise.

Less Occlusal Pressure—Heavy packing of the amalgam proximally against the matrix will spread the matrix to the adjacent teeth and thus establish anatomic contour and con-

tact of the amalgam restoration in harmony with the approximating teeth.

Restoration of Proximal Tooth Structure—Precontouring of the matrix after it is fixed on the tooth is useful when a considerable amount of proximal tooth structure is to be restored.

Method in Use of Amalgam—The amalgam is packed heavily in small portions. Loose mercury rising to the



3. The loop or circle of the matrix is mounted on molar and tightened so that it is locked on the tooth securely. Burnishing is done at the gingiva and one final turn made on the thumb nut to assure absolute grip at the gingiva. The open end of the slot is always placed occlusally where a slack is desired. Heavy packing of amalgam toward the matrix and all margins will spread the matrix toward the adjacent teeth to assume anatomic contour and contact in harmony with the form of the adjacent tooth or teeth as in an MOD.



4. The top plate is retracted first. Then several turns are made clockwise as is done in tightening. This unfolds and straightens the free ends to aid in the easy removal of the re-



tainer from the matrix strip.
5. Appearance of amalgam after the matrix strip has been removed.

surface is removed before additional amalgam is condensed. Carving, shaping, and polishing is done at a subsequent visit. This final five-minute step gives the greatest satisfaction to both patient and the dentist.

6. Malposed bicuspid with large diastopalatal space. The matrix is mounted and locked securely on the tooth. A proper sized wedge that will not extend above $1/3$ of the embrasure is tightly inserted. Heavy packing of the amalgam has spread the matrix toward the second bicuspid.



7. Resultant harmonious contour and contact of the restoration which the natural tooth did not possess because of its malposition.



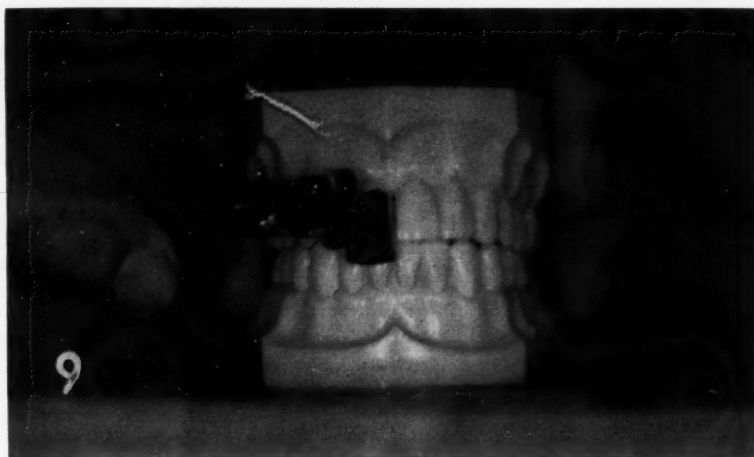
8. Wide strip trimmed and rounded so it can not lacerate the lip. The strip is placed around the tooth with the free

ends pointing toward the operator. Note pin inserted to reinforce the incisal corner. The restoration material is overpacked against the matrix strip which can be held in position with a finger or modeling compound. The free ends are held together with the fingers.

Procedure for Large Restoration

For large restorations in badly broken down teeth the following techniques have proved most successful:

1. Trim the desired matrix strip and mount on the tooth securely as usual.
2. Contour the proximal surface of the matrix strip gingivocclusally toward the adjacent teeth.
3. Wedge tightly; open the retainer so the matrix is released sufficiently to permit spreading to the greatest convexity of the adjacent teeth.
4. Heavy condensing of the amalgam will ensure spreading of the matrix to the adjacent teeth and thus establish an anatomic tooth restoration.
5. In MOD cavities alternate pack-



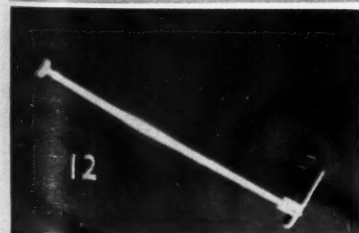
9. The proper slot is selected so that the closed end is near the gingiva to assure absolute constriction. The retainer is passed over the free ends and tightened until securely locked. Burnishing at the gingiva and the removal of excess restoration material is accomplished. The retainer is left fixed on the tooth until the restoration is completely set.



10. The mesial slot of the retainer is used because it is mounted lingually. The open end of the slot is placed occlusally. Note the spreading which gives flare occlusally and



the fixed tension gingivally where the closed end is placed. **11.** The completed restoration is shown. All missing surfaces of the tooth have been restored.



12. A simple device to hold a wedge to facilitate the insertion, especially on posterior teeth. Loosening the small nut releases the instrument from the wedge so that it can be removed without disturbing the wedge.

ing of amalgam on each side is advised.

Second Method

1. Trim a 7/16-inch strip of sufficient length to encircle a tooth. It is drawn over an instrument handle so that it curls into a cylinder.
2. The cylinder is placed over the tooth.
3. The regular 3/16-inch or cut 1/8-inch strip is threaded into the

retainer and an oversize loop is made. This loop or snare is passed over the 7/16-inch cylinder matrix on the tooth with a rotating motion.

4. The loop is worked down toward the gingiva and tightened securely.

5. The 7/16-inch strip acts as a shim gingivally to prevent overhang of restoration. It is easily contoured to conform to the shape, height, and width of contact of the adjacent teeth.

6. Heavy packing of the amalgam,

alternating on mesial and distal sides, will result in an ideal and practical tooth restoration.

Procedure for Use with Retainer in Anterior Teeth

1. Cut a strip to the desired size (the same as for bicuspid) and round off the corners. Narrow the ends toward the incisal so there will be no interference with the lip.
2. Place the matrix strip around the tooth to be filled; wax or modeling compound can be used to hold the strip in position.
3. Insert the restoration material

and overpack against the strip; press the free ends of the strip together and pass the retainer over them, spreading them into the retainer as described previously.

4. Turn the thumb nut to the right to lock the strip around the tooth. Keep the retainer in position until the restoration material has set.

5. To restore an incisal corner, slice the matrix strip mesially and distally, and fold over the remaining incisal surface of the tooth. Shape and finish incisally after the restoration has set. For strength a pin can be inserted to reinforce a broken corner.

Comment

Restorative dentistry is in great demand, and can be of greater value than all the other dental techniques combined. When compared to the cost of periodontal treatment, prosthetic replacements, and mouth rehabilitation, the value of this common dental technique is realized. The purpose of the procedure described here is to increase the dentist's skill in the use of amalgam and to shorten the time required to achieve the ideal result with this material.

51-04 Skillman Avenue

Postoperative Dental Pain Treated by Leritine®

(Continued from page 343)

2. It has proved highly effective even when administered orally.
3. No respiratory or circulatory side effects were noted in any of the 57 dental patients.
4. Minimal nausea, vomiting, diz-

ziness, flushing, or dryness of the mouth were noted. There were no allergic manifestations.

The results obtained with the use of Leritine in dental surgery are highly encouraging. Further clinical

trials will be helpful in establishing its importance as an effective therapeutic agent.

164 Speen Street

Observation on the Anatomy of the Superior Dental Nerves

M. J. T. FITZGERALD, M.B., B.Ch., and JAMES H. SCOTT, D.Sc., M.D., L.D.S.

Some Clinical Considerations

Three subjects of interest to the practicing dentist are the following:

- (1) In nearly all dissections it was found that the periosteum covering the posterior surface of the maxilla was remarkably thick, the fibrous tissue of the periosteum forming a felt-work of interlacing strands. This may cause difficulty in infiltration of the posterior alveolar nerves.

- (2) The variability in origin and situation of the middle superior dental nerve makes it impossible to block this nerve routinely, so that local infiltration of the bicuspid would seem to be the only way of achieving painless operations on these teeth.

- (3) The only segment of the anterior superior dental nerve which is constant in position is that which lies between the upper end of the

cuspid eminence and the nasal margin. In one case in four this nerve runs up to 1.5 centimeters below the infraorbital foramen, so that the standard method of blocking the nerve at the foramen is not reliable.

Note on the Long Sphenopalatine Nerve

The nerve supply of the hard palate receives a contribution from the long sphenopalatine in its most anterior part. The nerve filaments certainly run toward the posterior margin of the alveoli of the incisor teeth. Whether this nerve joins the anterior dental branches of the superior dental plexus is a moot point. On morphologic and developmental grounds such an overlap of sensory supply to the alveolar process proper (that is, to the periodontal membrane) would be expected.

Anesthesia May be Result of Dif-

fusion—The incisor teeth are usually regarded as being premaxillary, not maxillary, elements, and morphology would not demand any nerve supply by the sphenopalatine, a criterion in agreement with some authorities that supposed anesthesia of these teeth by a sphenopalatine block is the result of diffusion only.

Relation Uncertain—The relation of morphology to the nerve supply is somewhat uncertain here, for premaxillary teeth "ought" to be supplied by branches of the ophthalmic division of the trigeminal, but are not. This last may, however, be due to a migration of maxillary arch tissue so that the frontonasal process is everywhere shut out from the mucous membrane of the developing oral cavity.

Adapted from *British Dental Journal* 104:205 (March) 1958.

Investigation of

Neuropathologic Manifestations of Oral Tissue:

INHERITANCE and EMOTION

as Related to Tooth Structure Breakdown—Part Three

NEWTON W. MELLARS, D.D.S.,
and FREDERICK W. HERMS, D.D.S., San Francisco

This is the third installment of a four-part serial article. In this part the authors discuss dentine, the causes of dentinal breakdown, and the various approaches to treatment.

Aspects of Diagnosis And Therapy

The filling in of certain flaw areas by chemical deposition of silver from their salts has been observed and it has been noted marginally that when these areas are greatly magnified, such deposition will give bactericidal control only to enamel walls and will not bind together homogeneously, weaker enamel crystals to stronger. Restoration of various kinds may be useful therapy, but the challenge remains for further research.

Possibilities in Fluoridation Procedures—An important possibility is the fluoridating process. It is suggested, however, that the continued applications of these substances internally will be more profitable to future generations, if such applications influence in some manner the gene system toward a more normal crystalline formation during the ontologic development of tooth enamel.

Evaluation of Food Materials—Food substances should also be evaluated for what might be considered normally assimilable abilities to synthesize in normal ratios physiologically useful, inorganic salts to form essentially normal enamel.

Improvement Desired to Prevent Deficiencies—If growth processes in plants could be improved upon in this

direction, with inorganic salt additions to prevent deficiencies, this might prove to be an even better form of therapeutics, and more acceptable to human metabolism.

Bacteria and Their Toxins Demonstrated Pathologically — While harmful potencies of bacteria and their toxins can be demonstrated pathologically, present determinations do not find these agencies sufficiently lytic aggressively to influence the normal formations and relations of enamel crystals to decompose in situ. Furthermore, enamel flaws may be deeply positioned within enamel not showing surface avenues to their approach, but eventually leading to cavitation by mechanical means. For example, by processes of attrition.

Deep Cavitation from Mechanical Stress—These areas are not bacterially activated, but break down after (1) exposures of enamel surfaces, (2) abrasions, or (3) other mechanical stresses which encourage deeper cavitation.

Enamel Cavitations Continue Rampant—If the problem of dental enamel cavitations were one of bacteria, antibiotics, or aggressive chemical neutralizers, as they are known today, would be spectacular in effecting control. Enamel cavitations are as rampant as ever.

Alteration of Genetic Pattern may be Desirable—The fields of crystallography and biology differ basically and when the tendency is toward deterioration successful prevention therapy should be redesigned to alter the genetic patterns of anticipated weaknesses. At present, mechanical repair

by means of adding strength by well-designed and executed supportive means will probably be the most effective method of restoring shattered enamel substances.

Dentine

Dentine is a mesodermal structure, and is in many respects subject to the attacks common to other connective tissues. The processes of dentine breakdown however are entirely different.

Treatment may be Local or Systemic—The approach to dentine therapeutics is different in the respect that present corrective measures may be local or systemic. Dentine is an organic substance, nourished by the dental pulp, and has ramifying sensory neurodental fibrils within its mass. Dentine, unlike enamel, is softer and subject to bacterial attacks.

Causes of Dentine Deterioration—Agencies causing dentine deterioration may be (1) proteolytic enzymes, (2) thermal variations, (3) chemical irritants, (4) bacterial toxins, (5) traumatic forces, (6) pulp stone aggressions, and (7) more important, genetic weaknesses.

Affected by Mechanical Forces—One point in common with enamel is that dentine may be broken down mechanically, and is considerably disturbed by disruptive mechanical forces, an important factor when considering therapeutics. When dentine is unprotected, even simple irritants such as air draughts, chemical food differences, and rather mild pH variations of the saliva are sufficient to irritate the pulp and produce in time a pathologic process.

Covering Substance Desirable—Dentine, by nature, functions best

when protected by enamel, other covering tissues, or additive substances. Its organic composition of delicate neurofibrillar processes does not withstand much external trauma without some evidence of either fibril disintegration or pulp structural changes.

Microscopic Appearance Of Dentine

Microscopically, dentine appears as periodic structure but only in that it is composed of dentinal tubules.

Structural Category—Under the polarizing microscope dentine does not produce a clearly defined interference figure which would indicate a biaxial or uniaxial crystal structure. Under crossed polars, however, there is some indication of biaxiality and with the aid of the Berek Compensator when the compensator control is rotated, the color bands appearing differentiate the weak birefringence determinations, placing this structure in the category of an inorganic apatite, but in comparison to enamel it has considerably greater content of living organic structure and a different chemical formula.

More Flexible than Enamel—As might be expected, dentine is physiologically more flexible than enamel, due to its organic properties and origin, and it is therefore more able to withstand mechanical shocks. It is designed as a supportive structure of enamel and in this it is most effective.

Physiologic Repair Possible—In view of external mechanically introduced irritants producing eburnation processes in dentine, microscopic demonstrations illustrate a defensive possibility of successful physiologic repair.

Formation of Secondary Dentine—In such additives when secondary dentine accumulus in tubules results, the appearance of secondary and primary dentine is conformably homogeneous except for an abrupt change in the dentinal tubules, or their absence. These microscopic observations demonstrate the formation of secondary dentine from within the dentine matrix when this structure is exposed to mechanical forces such as mastication. It may also form to fill

in the higher levels of pulp horns, thereby reducing the volume of the pulp chamber to some extent.

Physical Response of Dental Pulp—In the first instance, that the dentine matrix surface area is affected is shown by calcific formations within the terminal endings of the dentinal tubules; and in the other, the secondary dentine is formed external to the dentine matrix but within the confines of the pulp chamber. The important point is the ability of the dental pulp to respond physiologically to irritants and create a successful mechanism of repair. Some animals have a better protection mechanism in this respect than human beings.

Catabolism of the Dental Pulp from a Psychodynamic Standpoint

Research on the dental pulp has proved to be informative and of considerable value to therapeutics, and has therefore been a prominent study project since 1945.

Investigation of this subject matter is divided into the following three categories:

1. Pathologic pulp changes consistently reversible on a physiologic basis. This may be referred to as a short-term pulp phenomenon.
2. Pathologic pulp patterns in which the progress is manifestly less liable to revert to normal by physiologic means, but in which the life span of the afflicted teeth is not critically shortened.
3. Definitely retrograde pathologic pulp changes in which final calcific pulp accumululus precludes any reversibility to normal. In fact, teeth harboring such pulps or pulp formations usually have variably shortened lives and are the source of much discomfort and pain.

Hidden Pathologic Pulp Processes—This investigation suggests that pathologic pulp processes may be present in teeth which do not demonstrate cavitation or carious dentine but which nevertheless, under certain conditions, are subject to regression phenomena. The records presented show that over sixty per cent of all dental cases examined clinically dem-

onstrate some form of dental pulp regression or calcific processes in various stages of development. Such cases do not always confine the pain symptoms to teeth, but may reflect these symptoms to other parts of the body, such as the neck regions, shoulder areas and joints, head areas and, at times, the eyes and ears.

Absence of Tooth Cavitation—It is emphasized that no tooth cavitation occurs with these pulp regressions and periodontic disturbances do not always accompany them. The teeth may be perfect, although some may have small restorations. However, tooth cavitation or periodontia is not causal to these pulp stromatic changes.

Basic Factors—The determinations presented here are based primarily on two factors: (1) that genotype tissue-structure patterns are transmissible, that such biologic patterns may be prenatally defensive against tissue breakdown or, conversely, are susceptible to pulp cell regression; and (2) that genotype weak tissues are destructively accelerated, postnatally, by long-term processes of emotional upsets or stresses. It therefore seems important to diagnosis, prognosis, and therapy, to consider these points well if adequate or permanent relief is to be successful.

Short-Term Physiologically Repairable Pulp Phenomena

Under this heading are cited those cases in which teeth become tender and at times painful but which do not show outward causes, such as tooth cavitation. In regard to gingival recessions, analysis does not indicate that such conditions are the cause of the short-term changes within the dental pulp which produce pain. Under this classification reactions are based wholly on the two factors previously mentioned: (1) the causal inheritance of certain weak endothelial cells, and (2) the entrance of an accelerating factor, that is, the emotional stress which is, under this heading, of short duration.

Intervening Factor Causes Pain—Examination of all our office cases over a period of five years shows a

dominant number of gingival recession problems which are not painful. Those which are painful have incurred a second intervening factor which must be demonstrated as something more than dental fibrillar irritation only. The question of whether changes in the fibrillar structure might lead to long-term pain reactions does not seem factual.

Pain from Changes Within Pulp Structure—Although the fibrils transmit sensations to the pulpal neuro structures when excited by external means, painful responses as the result of catabolic processes of the fibril itself, such as eburnating processes, have not been observed. In other words, long-term pain seems to be purely the result of changes within the cellular pulp structures.

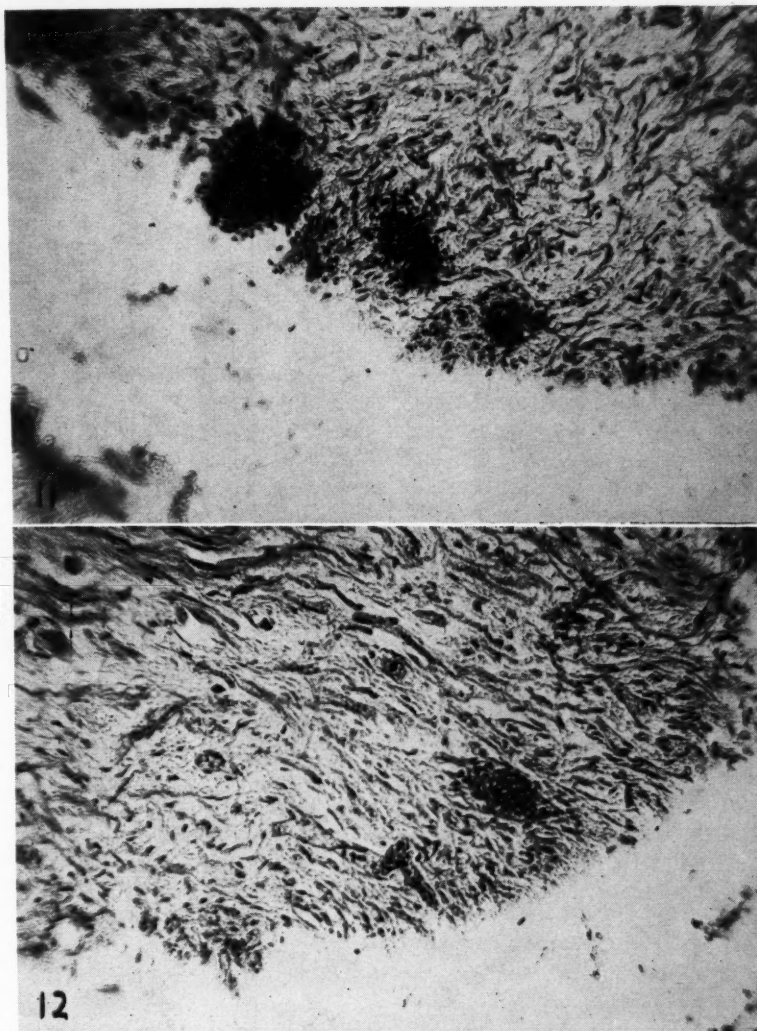
Source of Long Continued Pain—It would appear that a division exists between the fibril, which terminates as part of the odontoblast, and the deeper or adjacent synaptically related pulp neuro structures. As a matter of fact, long-term and continued pain, not due to external enamel cavitation, arises predominantly from capillary endothelium changes, as will be described.

Short-term Pain Therapy Simple—Short-term stimulus of the fibrils resulting in pain will be alleviated upon removal of the stimulus or when external stimulus is isolated from the fibrils, as with restorations or coverings of one kind or another. Applying an isolating medium to exposed fibrils is a comparatively simple and effective therapy in short-term pain problems and therefore is not critical prognostically.

Long-term Pain Therapy—Long-term pulp catabolism where pain persists, is critical and corrective measures are far more involved.

Description of Histologic Sections—The two histologic sections Figures 11 and 12, show sections of the dental pulp magnified 450 times. The photomicrographs were taken of the peripheral portions of the dental pulp of two patients both experiencing long-term pain in a number of their teeth.

Figure 11: A capillary near the peripheral border of the pulp has



11 and 12. Illustrating escapes of red corpuscles occurring in Zone of Weil. Patients harboring such phenomena were in highly emotional state. Uncontrolled pain, and pressure from hemorrhagic areas upon adjacent nerves necessitated removal of teeth in these cases. Typical of this first stage of pulp disorder as described in the text, physiologic repair may result. Chemotherapeutic measures may be helpful.

ruptured and red blood corpuscles are seen escaping into the adjacent pulp stroma. Peripheral nerve bundles are seen to intertwine abundantly among the stellate connective tissue cells in this area, the zone of Weil.

Figure 12: A capillary has burst, again showing the escape of cells while another is about to burst and illustrates a cul-de-sac in the capillary with blood cells grouped together within the weakened capillary walls.

Capillary Phenomenon: Two points

are presented by this phenomenon: (1) bleeding of this kind occurs within the zone of Weil and always at the junction points where the arterial and venule capillaries are of common lumen, and (2) the bleeding occurs nearest those areas at which the end terminals of the finer sympathetic nerves are abundant.

Interpretation: It is evident that pressure from the escaping of cells is a primary cause of pain, which exists in varying degrees of severity,

possibly according to the number of hemorrhagic areas. The process of repair of this capillary fragility will be physiologic, wherein the escaped cells are again taken up in the blood stream and the endothelial cells will join and repair to make the capillary once more a blood-transporting tube. This, of course, will reduce to normal the perivascular pressures due to capillary engorgement and the escaped cells.

Important Factors in Repair—During repair the autolytic irritation of destroyed cells present during the catabolic process, probably resulting from an upset oxygen ratio and liberation of certain protolytic enzymes, must be considered. When blood, transporting nutritive elements and especially oxygen, is interrupted in a subnormal manner, adjacent vascular stroma cells react defensively almost immediately and can not endure anoxia for long. It is apparent that metabolic upsets result in a complex set of chemical circumstances in which neurosensory structures react in the vasomotor control of capillaries to affect both defense and repair for a return to normal.

Problems in Metabolic Disturbance: In this situation a number of problems exist: (1) the genetically weak endothelial cells of the capillaries; (2) the inability of the endothelial cells to withstand unusual strain; (3) the emotional accelerator from the brain, by which vasomotor influences are produced upon the endothelium, which are not conducive to nutritional stability in weak areas; (4) the subsequent localized tissue reactions in which neuro stimulation to the brain and from the injured areas sets up its own neural stimulation upon adjoining capillaries and their endothelium to combat and demand stromatic cell adjustment on an anabolic basis; (5) the chemical and hormonal adjustments necessary to renewed cell synthesis.

Bleeding Considered of Genotypic Etiology—The accelerating influence causing already weak cells to break down early may be considered due to the emotional syndrome of the patient, as manifested in long-term ex-

citement cycles. Although most of these studies were made on patients at the Napa State Hospital, all patients are not to be classified as psychopathologic. There are patients in office practice, who are under constant stress, but who are also overstimulated, who accelerate these capillary fragility sequences during milder, but continuing, cycles of emotional upheavals.

Pulp of Manic Depressive Patient Studied—Figure 11 illustrates a section of a bicuspid pulp of a hospitalized patient, a young woman 17 years of age diagnosed as manic depressive. During her excitement cycles, constant pain in her posterior teeth made it necessary to extract a bicuspid tooth from which the pulp contributed to this study. Her teeth were excellent morphologically, without cavitations. During her depressive moods she had no apparent symptoms of pain or outward indications of pulp bleeding.

Pulp of Schizophrenic—In Figure 12, a woman, age 40, was diagnosed as schizophrenic with paranoid tendencies. She also experienced pain in her teeth during cycles of excitement. The sectional pulp of her tooth illustrates the same phenomena as in the previous case. It is useful in this case to demonstrate a capillary about ready to burst and while this section shows many capillaries which have burst, it is somewhat infrequent that a demonstration of this kind can be made. This patient has a number of small amalgam restorations but no gingival recession while the patient in the previous case had few restorations with some minor recessions about the cuspids and second molars. In this case intolerable pain was also a factor, and it was decided to remove the tooth in question. Continued intractable pain interfered with psychotherapy. Other sensitive teeth were moderately painful and responded completely to vitamin therapy and mild sedation after psychotherapy was concluded.

Capillary Fragility Diagnostic Possibility—In cases of persistent pain, it has been advantageous to make a petechiometer test upon a hairless

area which, if positive, will disclose more than 15 petechiae in a centimeter circle when under a suction of a ten-centimeter drop from a mercury column. Such a test suggests that the patient is systemically subject to capillary bleeding. In these tests family similarities have been noted and it seems apparent that capillary fragility may be an inheritable trait.

Evidence of Physiologic Recovery—Physiologic repair is assumed when the patient no longer experiences discomfort or pain in his teeth over long periods of time, say six months.

Chemotherapy of Value—Although many unhospitalized patients correct their problems through insight into the underlying causes of their emotional disturbance, or obtain relief from psychiatric treatment, there are times when chemotherapy is an aid. Mild sedatives such as aspirin compounds are effective and well-directed vitamin therapy is helpful in supplying these catalyzers to genetically weak cells. A usual formula which we employ is as follows: thiamine hydrochloric acid 0.01° gram, ascorbic acid 0.200 gram, nicotinic acid 0.150 gram, calcium pantothenate 0.020 gram, pyridoxine 0.060 gram, also vitamin A 5,000 units.

Vitamin D Excluded: This accumulative catalyzer was found to be dangerous. Extremely young patients showing a definite need for vitamin D, as in rickets for example, may require it. After adolescence the dosage curve for vitamin D approaches zero in order to preclude a catalyzer which favors calcium deposition beyond the normal tolerance of the tissues.

Dosage individualized: In problems of capillary fragility a serious effort is made to regulate the dosage of the various fractions to meet what is considered to be the individual requirement. Space will not permit analysis of the pharmacologic aspect of the vitamins which have been found beneficial. The few presented, however, will be helpful in the chemotherapeutic correction of capillary fragility in the dental pulp.

Successful Chemotherapy not Al-
(Continued on page 368)

The EDITOR'S Page

THE MOST significant development in dental practice in the last five years has been the introduction of newer methods and instruments for the removal of tooth structure. These newer devices have reduced the time and the discomfort to the patient in operative procedures. Thus both the dentist and the patient have profited. A reduction of stress and strain to the patient makes dentistry more acceptable and should increase the demand for services. In turn, anything that saves time and lessens tension to the dentist is an economic and physiologic advantage to him.

In an excellent comparative evaluation of the newer techniques, Hartley¹ has considered four factors: "1) cutting time; 2) over-all time of operation; 3) vibrations transmitted to the skull during cutting; and 4) patient response and determination of an 'annoyance factor' for each type of instrument."

Five different types of instruments were used in the study: 1) Standard (low speed) 4,500 to 6,000 r.p.m. using steel and carbide burs; 2) high-speed handpiece on a conventional dental engine, 12,000 to 16,000 r.p.m. using carbide burs and diamond points; 3) hydraulic handpiece, 45,000 r.p.m., using diamond points; 4) superspeed handpiece used on a conventional dental unit that had been altered by the removal of the high-speed resistant shunt and the use of a large pulley upon the motor. The speeds were 80,000 to 120,000 r.p.m. Carbide burs were used; 5) an ultrasonic device in which cutting was produced with an abrasive slurry of aluminum oxide. The instrument produced a frequency of 29,000 cycles per second.

A coolant spray of water or water and air was used with all these different types of instruments.

The air-driven instruments now on the market were not included in this particular investigation. To make the evaluation complete it is hoped that the same investigator will make an early report on these instruments.

Hartley reports these comparisons:

1) Low speed: The over-all operation time, which included the administration of anesthesia and the use of hand instruments, was 34 minutes. As recorded on an electronic device the vibrations transmitted to the skull were the highest for any of the cutting procedures. The "annoyance factor" to the patient was set as 10 on the basis of the adverse reactions.

2) High speed: Over-all operative time, 16.5 minutes. Reduced amplitude of skull vibration. "Annoyance factor," 8.

3) Hydraulic handpiece: Over-all time, 12.3 minutes. Reduced amplitude of skull vibration. "Annoyance factor," 4.

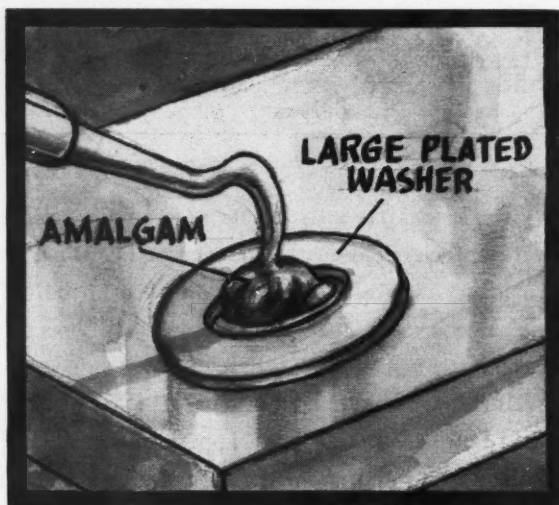
4) Superspeed: Over-all time 12.3. Reduced amplitude. "Annoyance factor," 5.

5) Ultrasonic: Over-all time was 34.6 minutes. The increase in operative time is explained, in part, by poor visibility because of the accumulation of slurry which necessitates frequent stops to allow the patient to rinse his mouth. In addition, considerable time was required to change the cutting tips. Vibration intensities were the lowest for any method. "Annoyance factor," 2.

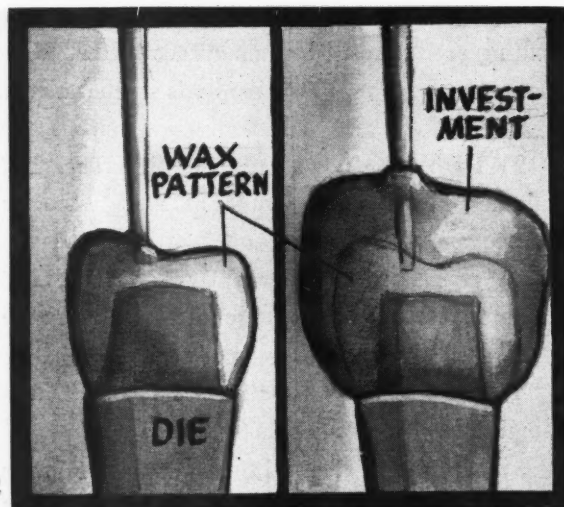
A comparable report from Hartley on the air-driven handpiece, that on clinical trial has been so well received, would be a valuable contribution.

We may be certain that high-speed techniques are here to stay. The dentist who does not himself evaluate the several methods and avail himself of these technical refinements will find that a share of his patients have shifted to other dentists who are more progressive.

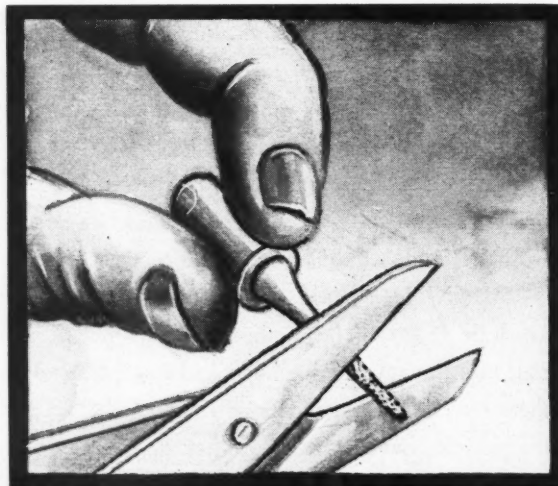
¹Hartley, Jack L.: Comparative Evaluation of Newer Devices and Techniques for the Removal of Tooth Structure, *J. Pros. Den.* 8:170 (January) 1958.



1



2



3

Clinical and Laboratory Suggestions

Prevent Scattering of Amalgam

Forrest F. Worman, D.D.S., Dayton, Ohio

1. When the amalgam mix is placed on the bracket table surround it with a $\frac{3}{4}$ or 1-inch nickel or chrome-plated washer. This will prevent scattering of the amalgam while it is being picked up by the carrier.

Preventing Wax Distortion

Julius G. Godwin, D.D.S., St. Louis

2. After the sprue is attached, cover the wax pattern on the die with inlay investment. When the investment has set remove the pattern from the die and complete the investing in the casting ring.

Saving Carbide Burs

Steven O. Woodward, D.M.D., Paducah, Kentucky

3. Instead of discarding dull carbide burs, snip one-third of the end from the bur with a wire cutter. This shortened bur is useful for deciduous teeth and second molars where the bite is close.

READERS are Urged to Collect \$10.00

For every practical clinical or laboratory suggestion that is usable, DENTAL DIGEST will pay \$10 on publication.

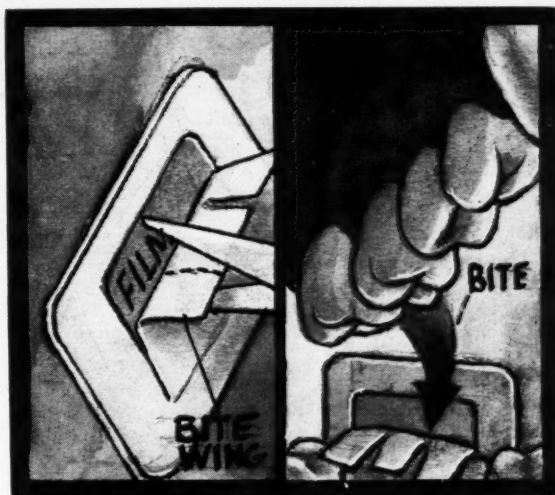
You do not have to write an article. Furnish us with rough drawings or sketches, from which we will make suitable illustrations; write a brief description of the

to SUGGESTIONS . . .

Adjusting Bitewing Films

H. E. Patin, D.D.S., South Milwaukee, Wisconsin

4. To prevent the bitewing tab from tearing away from the long film when it is bent, cut three slits in the tab.

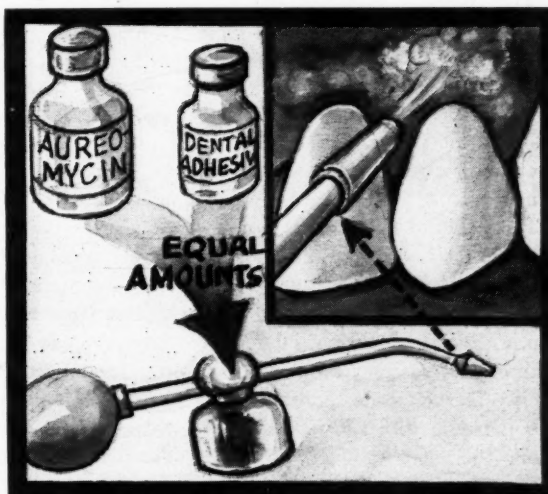


4

Increasing the Adhesive Quality of a Powder Medication

Richard L. Tornatore, D.D.S., Canastota, New York

5. Mix equal parts of aureomycin powder and a denture adhesive powder in an insufflator. When the mixture is blown upon a lesion of the oral mucous membrane it is held in position for a considerable time.



5

Molding Baseplates

R. F. Price, D.D.S., Ottawa, Ontario, Canada

6. A wet rubber ball $1\frac{1}{4}$ inches in diameter is useful when adapting a baseplate to a model.



6

technique involved; and jot down the advantages of the technique. This shouldn't take ten minutes of your time. Turn to page 322 for a convenient form to use.

Send your ideas to Clinical and Laboratory Suggestions Editor, DENTAL DIGEST, 708 Church Street, Evanston, Illinois.



Backache from Vascular Disease

It is important to keep in mind the fact that pain in the back, hip, or thigh may result from occlusive vascular disease. Generally there is a history of severe aching or cramping in the lower back and hip which comes on gradually with a specific amount of exercise. The cramping disappears completely with a short period of rest. Walking may be resumed until back and hip pain again supervene.

Males under 60 years are most frequently affected. Pain only in the calf is found in the younger males with arteriosclerosis obliterans.

True vascular backache is always accompanied by diminished arterial circulation in the lower extremities. The anterior and posterior tibial and popliteal arteries usually do not pulsate and the femoral pulse is feeble. Trophic changes of the feet are seldom seen.

The status of the peripheral circulation in the lower extremities should be determined. When the circulation of a leg is severely impaired in a patient with ipsilateral pain in the lower back or hip, vascular insufficiency is likely. The opposite limb will be asymptomatic with adequate circulation.

Atrophy of the gluteal muscles and impotence may be frequently found in patients with chronic thrombosis of the distal aorta and iliac arteries. Aortographic examination may delineate the exact site and type of occlusion and the pattern of collateral circulation. Segmental arteriosclerosis obliterans may be treated by excision and replacement by arterial graft. The oscillometer may aid in evaluating the quality of arterial circulation in the legs.

A number of orthopedic and neurosurgic conditions must be considered in the differential diagnosis. Hypertrophic arthritis of the hip is a common cause of pain in the back and hips in patients over 60 years of age. Pain is aggravated by activity and relieved by rest. Restriction of

MEDICINE

and the Biologic Sciences



motion of the hip, however, accompanies the pain and roentgenograms reveal cystic and sclerotic changes in the acetabulum and head of the femur. Hypertrophic arthritis of the lumbar spine is seen in most older people and is significant only when back pain is aggravated by stress, motionless lying or sitting, and cold, damp weather. A lumbosacral brace may afford relief.

A protruded intervertebral lumbar disc may simulate intermittent claudication of the back. Pain, however, is almost always aggravated by bending, lifting, coughing, or straining and is not invariably produced by movement as with claudication. Posterior hip pain that radiates down the leg, muscular weakness, or altered tendon reflexes are characteristic. Congenital anomalies of the lower lumbar spine may be accompanied by intermittent pain in the lower back and hips but tenderness is localized over the involved area and the pulses in the lower extremities are adequate.

Phalen, George S.: *Backache caused by Vascular Disease, Clin. Ortho. No. 5, 1955, pages 149-154.*



Diving Complications

Medical complications of diving are at present likely to occur more frequently than previously, because of the advent of self-contained breathing units and increased interest in underwater swimming.

The deeper the descent underwater, the more the air in the lungs becomes compressed and the greater is the volume of air needed to keep the lungs at normal surface expansion. Rarely can a skin diver go deeper than 110 feet. The pressure from compression of the lung volume would fracture the rib cage. During ascent the air in the lung expands. Air must be exhaled during ascent from any depth greater than 10 feet or the lungs will be unable to increase in volume to accommodate the gas expansion.

If expanding air is not vented off during ascent, an alveolus ruptures into a large or small vessel in the lung and air emboli form. Since the diver is usually in a vertical position, a cerebral embolism almost always causes immediate loss of consciousness and possible death if a compression chamber is not available.

Air embolism can be prevented by stopping every 10 to 15 feet during ascent to empty the lungs. If the mouthpiece is lost, the diver may reach the surface safely by allowing air to escape unhindered all the way up.

If an alveolus near the surface of the lung is ruptured, pneumothorax results. Subcutaneous emphysema is noted if excess air is expelled into the chest cavity.

Air breathed under pressure increases the amount of nitrogen absorbed by the blood. In coming to the surface, the nitrogen appears in the blood as minute bubbles.

If a diver remains at considerable depth an extended time and is not adequately decompressed, he will experience the bends. To prevent the bends, all underwater swimmers should know how long a diver can stay at various depths without decom-

pression, learn to surface slowly, and wear a depth gauge and underwater watch.

The most common accident is damage to the sinuses and ears by faulty equalization of pressure. Because of compressed air, slight infections in the upper respiratory tract may involve the sinuses. Bacterial or fungous infections of the canal and the trauma associated with aero-otitis also frequently disable the underwater swimmer.

These disorders can be prevented or treated with nasal and otic solutions of Biomydrin®. The agent possesses bactericidal, bacteriostatic, and antiallergic activities, contains a mucolytic penetrating agent, and shrinks the nasal passages. The otic solution also has fungicidal activity and reduces pain and irritation of external otitis.

Martins, James K.: *What's New in Diving Medicine, Gen. Pract.* 14:91-96 (June) 1957.



Allergy in Respiratory Infection

Allergy is a primary or contributing factor in many diseases of the upper and lower respiratory tract. Respiratory allergy rarely exists alone. Allergic rhinitis, either perennial or seasonal as hay fever, and bronchial asthma may be purely allergic at onset but almost immediately are complicated by infection.

Respiratory tract infection and allergy are closely associated and interdependent both physiologically and pathologically. Lymph tissue and lymphocytes are involved in isolating and filtering infective material and in acting as the site for immune response and antibody formation. Lymphoid hyperplasia may be caused by both infection and allergy.

Allergy and infection may be associated in any part of the respiratory tract. A vicious cycle may be established. Allergy lowers the resistance of the mucous membranes and interferes with ventilation and drainage,

leading to superimposed secondary infection. The infection, in turn adds bacterial factors to the allergic tendency.

Allergy is often involved in the epidemiology of the common cold. Perennial allergic rhinitis is the most important underlying factor in upper respiratory disorders. Sinus disease, in turn, may be an important cause of asthma.

The tissues of the nasopharynx, eustachian tube, and middle and external ears may become shock areas to offending allergens. The incidence of allergy is high with bronchopulmonary infections.

Allergy must be considered even when a person is first seen with a complication such as sinusitis or bronchitis. A familial tendency to allergy may be elicited. Skin tests for sensitivity are essential. The common inhalants should be tested. The relationship of such factors as endocrine dysfunction, nutritional deficiencies, gastrointestinal disturbances, and psychogenic elements should be considered.

The primary aims in treatment of respiratory infection are to provide adequate drainage and ventilation to remove the causative agent. Radical procedures involve surgery or irradiation to remove infected and hypertrophied lymphoid tissue. Conservative measures should be first tried. And finally complete avoidance of offending allergens is recommended.

Dintenfass, Arthur: *Significance of Allergy in Persistent Respiratory Infection, Arch. Otolaryng.* 64:171-177 (August) 1956.



Unexpected Death In Children

Most children who die unexpectedly have antecedent manifestations. Usually death is not anticipated because the illness does not seem severe and may be of short duration. The most common cause of unexpected death is infection. Postmortem cultures of blood are essential.

Organisms that inhabit the gastro-

intestinal tract are usually in the blood stream after death but are of no significance. Pneumococci, beta hemolytic streptococci and Hemophilus influenzae are seldom evident unless other signs of infection are apparent or overwhelming infection caused sudden death.

Gram-negative bacilli are generally of little significance. These organisms may be indicative, however, of septicemia if portals of entry, such as ulcerative lesions in the colon and skin exist.

Death may be attributed to septicemia if positive blood cultures are obtained and an infectious process is clearly evident. If pathogenic organisms are isolated but infection is localized as with otitis media, or is absent, septicemia is an arbitrary explanation of death.

Death may be due to bronchopneumonia if histologic studies show a moderate to severe inflammatory process in the pulmonary alveoli. Death of children with enteritis may be due to metabolic disturbances secondary to diarrhea. Examination of many sections of the myocardium may be necessary to demonstrate interstitial myocarditis.

Most children who die unexpectedly from congenital heart disease are less than 7 months of age. Interventricular septal defects may be lethal in early infancy, especially if other lesions enhance pulmonary blood flow or increase pressure in the left ventricle.

Children with endocardial sclerosis usually have symptoms for only a few days before death. Manifestations are nonspecific, including lassitude, irritability, fever, cough, dyspnea, and cyanosis. Symptoms may be attributed to respiratory infection before a roentgenogram is made. Children dying from intestinal obstruction or perforation have premonitory symptoms. If the disorder is recognized early control of peritonitis and correction of fluid and electrolyte imbalance may prevent death.

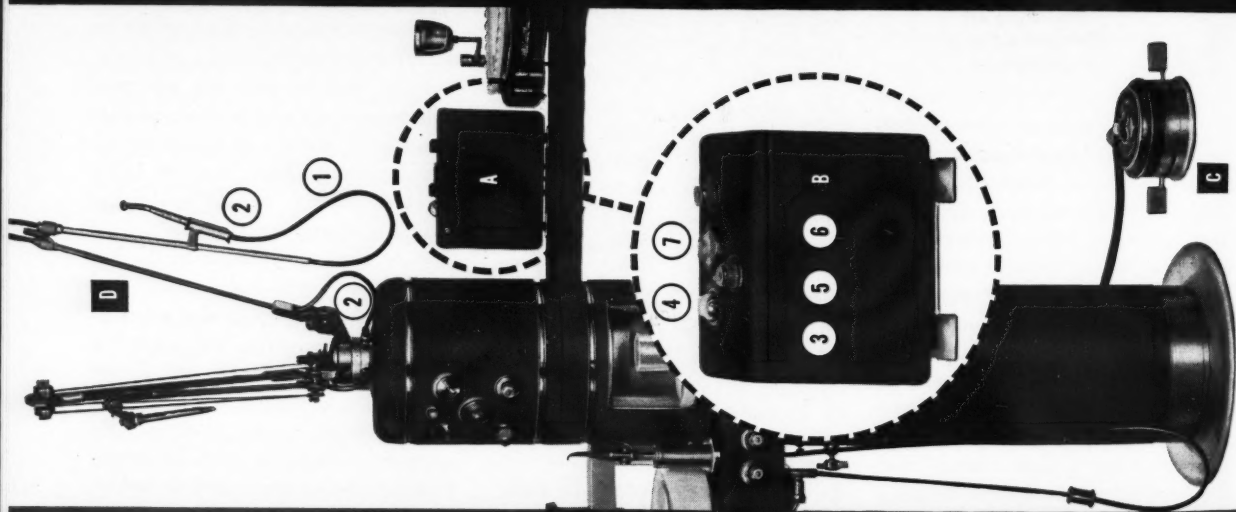
Death should not be attributed to central nervous system damage if quadriplegia, cerebral palsy, or some other lesion was apparent before the

Incomparable
for
efficiency

THE S.S. WHITE BORDEN AIROTOR

Presents like the quiet, smooth, vibration-saving features of this new-inventory precision hand-piece. It operates at speeds from 30,000 to 250,000 r.p.m. with variable air pressures . . . and gives you the exclusive advantages listed here. Order now.

THE S. S. WHITE DENTAL MFG. CO.
Philadelphia 5, Pa.



factory installed
units have these
additional features

Only the S. S. White Airtor gives you all of these features

1. **CONCENTRIC HOSE** Concentric hoses delivering water, air and lubrication to the handpiece head.
2. **QUICK COUPLERS** Quick coupling at both ends of handpiece hose makes it easy to disassemble for checking or servicing handpiece and tubings.
3. **POSITIVE LUBRICATION DEVICE** Exclusive lubrication feature permits operation at air pressure as low as 10 lbs. p.s.i.
4. **VISIBLE LUBRICATOR DOME** Lubrication dome is exposed to permit its performance to be observed or checked without removing the cover.
5. **WATERPROOF COILS** Coils in the Solenoid valve assembly are waterproof, and insure against short circuits.
6. **FILTER FOR POSITIVE AIR FILTRATION** Air filter removes all particles more than 10 microns in size.
7. **EXPOSED AIR GAUGE** Exposed gauge for quick checking of air pressure and more accurate speed control.

A Airtor control box styled to better match the unit design and finished in the color of the unit.

B Automatically activated purging valve on the air filter eliminates the need for operator's attention.

C Single foot control for both Airtor and standard hand-piece. A dome switch permits operator to activate either instrument.

D Double section arm and hanger eliminates dangling tubing and positions the Airtor handpiece in a more accessible location.

(Double section arm and dual support shown are optional items)

terminal illness. Children with such lesions probably succumb to illnesses that are not fatal to children who develop normally.

Death should not be attributed to suffocation simply because an infant is found dead lying face down in bed. Careful examination usually discloses an infectious process.

Arey, James B., and Sotos, Juan: *Unexpected Death in Early Life*, J. Pediat. 49:523-539 (September) 1956.

Thrombophlebitis and Malignant Disease

Sometimes the initial or primary signs of malignant disease are symptoms of thrombophlebitis. The cancer may be located in the pancreas, ovary, breast, lung, stomach, or prostate.

Venous thrombosis is a particularly valuable diagnostic finding in instances of carcinoma of the pancreas, as local signs of the tumor are often absent. Apparently pancreatic cancer produces more extensive thrombophlebitis with greater involvement of the superficial veins than tumor in any other organ. Thrombophlebitis is associated with carcinoma of the body or tail of the pancreas three times more frequently than with cancer of the head of the pancreas.

When thrombophlebitis is detected, primary types of venous disease should be excluded before tests for cancer are made. Thrombophlebitis associated with cancer usually produces a bland thrombus, and pronounced inflammatory changes in the thrombosed vein generally are a sign of primary thrombophlebitis.

Thromboangiitis obliterans is distinguished by arterial insufficiency with or without thrombophlebitis, a chronic course, and onset usually before age 40. Recurrent idiopathic thrombophlebitis generally has a protracted course and may be episodic over many years, whereas the course of thrombophlebitis with malignant disease is usually rapid.

Secondary causes of thrombophlebitis that should be excluded before

cancer is incriminated include local factors such as chemical or mechanical injury, inflammation, varicose veins and ischemia, systemic processes such as postpartum and postoperative states, late effect of severe injury, infectious diseases, blood dyscrasias and pregnancy, and heart disease.

An unexplained episode of pulmonary embolism or refractoriness of thrombophlebitis to anticoagulant therapy should arouse suspicion of cryptic malignant disease. Elevated sedimentation rate without apparent cause may be valuable collateral evidence. If careful study does not reveal a cause of thrombophlebitis and two episodes of the disease occur, extensive examination to detect cancer is justified. During physical examination, particular attention should be given to breasts, prostate, and pelvis.

The cancer is often inoperable at the time of diagnosis. However, since many of the patients are under age 55, efforts at diagnosis with subsequent appropriate therapy are justified. Earlier diagnoses might permit surgery before metastasis. Even if cure is not possible, life may be prolonged by operation. Resection of neoplastic tissue possibly reduces the thrombosing tendency. Also, diagnosis at an early date may be of some value economically to the patient in planning future care.

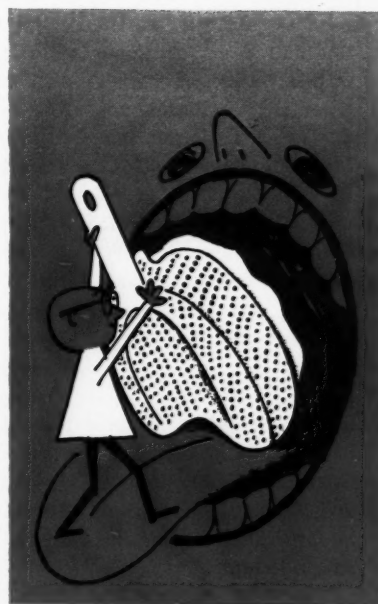
Woollings, Kenneth R., and Shick, Richard M.: *Thrombophlebitis: A Possible Clue to Cryptic Malignant Lesions*, Proc. Staff Meet., Mayo Clin. 31:227-233 (June) 1956.



Removal of Tonsils And Adenoids

Diseased tissue should be sacrificed in most patients even though the tonsils and adenoids are intimately related to the hematopoietic system and important in establishing immunity. If the patient has recurrent symptoms, age is not an important consideration.

An infection is not localized by antibiotics. Even if symptoms subside after drug therapy, bacteria may remain in adenoidal crypts. These are ideal sites for growth and multipli-



prevent
gagging

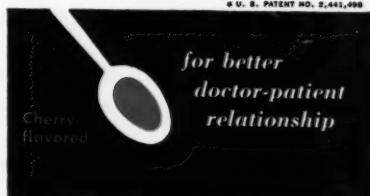
XYLOCAINE®
(brand of lidocaine*)
VISCOUS

Before taking x-rays and impressions, administer one or two teaspoonfuls of XYLOCAINE VISCOUS; instruct the patient to swish it around in the mouth for a few seconds before swallowing. Allow 3-5 minutes waiting period after swallowing.



Astra Pharmaceutical Products, Inc.
Worcester 6, Mass., U. S. A.

U. S. PATENT NO. 2,641,498



cation and precipitate toxemia. Also, the great variety of organisms in the tonsils and adenoids often precludes successful antibiotic therapy.

Tonsillectomy and adenoidectomy are necessary for repeated sore throat, cervical adenitis, impaired respiration and mouth breathing, recurrent otalgia, catarrhal otitis media, especially when antibiotics are given during each episode, impaired hearing from involvement of the eustachian tube adjacent to diseased adenoids, continuous postnasal drip, snoring, and retarded mental development due to anoxemia.

Many puny, lackadaisical children who have poor appetites and pigeon breasts and in whom high-arched palates, malocclusion, and physiognomic changes are imminent should have tonsils and adenoids removed. Systemic disease such as nephritis and rheumatic fever could probably be prevented by tonsillectomy and adenoidectomy.

Tonsillectomy and adenoidectomy should not be done if the patient has acute infection, anemia, leukemia, active tuberculosis, delayed coagulability, or hemoglobin below 10 grams. During the summer, tonsils and adenoids should not be removed because of the possibility of poliomyelitis. The operation may be advisable for persons with allergy, sinusitis, or asthma.

Personal and familial records of bleeding must be evaluated and a complete preoperative blood survey should be made when possible. Blood dyscrasias and infectious mononucleosis are diagnostic possibilities when cervical adenitis is of long duration.

The psychic trauma of tonsil and adenoid surgery is greatly exaggerated. This can be obviated by giving frank explanations to the child and parents.

Since saliva is a potent coagulant, the function of the salivary glands should be preserved. Warm foods seem to cause less pain than cold substances and should be given twenty-four hours after surgery. Bed rest at home for a few days is recommended. Exercise and overexertion should be avoided.

Ersner, Matthew S., and Lerner, Sidney S.: *The Unsolved Problem of the Tonsils and Adenoids*, Clin. North America 40:1749-1760 (December) 1956.



Surgery with Cirrhosis

An increasing number of patients are coming to surgery as a result of improved medical management. Surgery is being done for both related and unrelated disorders. In the past, the mortality associated with surgery in cirrhotic patients prohibited all but the most urgent operative procedures. Now, however, in view of the ability of the liver to regenerate, the availability of blood for transfusions, chemotherapy to control infection, improved anesthesia, and the better knowledge of fluid and electrolyte balances, indications for operation may be somewhat modified.

Liver disease is often far advanced before laboratory procedures detect dysfunction. Tests ordinarily employed do not specifically identify the type of damage but do reveal alterations in function and inflammatory or degenerative parenchymal change. When used with other findings, the tests are of diagnostic and prognostic value.

Of greatest significance is the ability of the liver to synthesize albumin and to convert vitamin K to prothrombin. Low serum albumin levels in patients with cirrhosis indicate a decrease in blood proteins and depletion of labile albumin stores in the extravascular spaces. Since the amount of albumin in the blood affects the functions of organs and the distribution of fluids among tissues and organs, the inability of the liver cells to form the fraction adequately is serious.

When hepatic function is unimpaired, vitamin K is rapidly formed into prothrombin. Primary parenchymatous disease of the liver diminishes both synthesis and storage of prothrombin. The ability of the jaundiced patient with hypoprothrombinemia to respond to parenteral vitamin

K is a valuable measure of hepatic function. A successful operative procedure is unlikely when prothrombin production cannot be restored to normal.

The prognosis is extremely poor in patients with cirrhosis and bleeding from esophageal varices. Death from hemorrhage can often be prevented by portacaval or splenorenal shunt, but preoperative evaluation must be accurate. When the outlook seems doubtful on the basis of laboratory and physical examination, a period of medical management should be undertaken. Patients unrelieved by diet, vitamins, correction of fluid and electrolyte imbalance, transfusion, diuretics, and low-salt intake cannot be expected to survive the immediate postoperative period.

Because of the high oxygen demand of the liver, any anesthetic agent productive of anoxia threatens cirrhotic patients. If poor prognostic signs (ascites, prolongation of the prothrombin time, hypoalbuminemia, and small liver) are lacking, the patient usually tolerates either spinal or cyclopropan anesthesia with adequate oxygenation. Routine use of unselected sedatives and opiates before and after operation adds to the risk of surgery. The correct choice of antibiotics increases the patient's chance for recovery.

Cayer, David, and Henry, Ozmer: *Evaluation of the Patient having Cirrhosis as a Surgical Risk*, South. M. J. 49:1506-1512 (December) 1956.

Fatal Reactions to Penicillin

Major VERNON SMITH, M.D.*

Summary and Conclusions

Deaths due to penicillin sensitivity are caused by immediate anaphylactic reactions rather than by the delayed urticarial or serum-sickness type of reactions. Pretherapy identification of persons likely to have anaphylactic reactions would permit withholding of penicillin to prevent fatal reactions.

*Chief, Medical Service, United States Army Hospital

Simplified Procedure Of Testing

This consists of application of drops of full-strength (300,000 units per millimeter) procaine penicillin solution to a skin scratch and into a conjunctival sac. The test areas are observed after fifteen minutes for itching, redness, edema, and wheal formation. The only material required is that needed to administer the therapeutic dose of penicillin.

Evaluation Procedure—The object of a clinical study during which 1365 subjects were tested was evaluation of this procedure as a routine pretherapy sensitivity test. The method was found to be highly accurate in identifying persons susceptible to penicillin anaphylactic reactions. It can be applied in all situations in which penicillin might be injected, both military and civilian. Any morbidity associated with the tests themselves may be expected to be milder than the reaction to a full therapeutic dose of penicillin administered to the same person.

Sensitivity Test should be Routine—From the experience of this study, this procedure of testing for anaphylactic sensitivity should be applied routinely to all patients scheduled to receive penicillin before the first injection of a series. Patients who demonstrate (1) an area of skin erythema greater than 1 centimeter in diameter, (2) itching, redness, or edema of the eye should not be given penicillin in any form until further testing conclusively proves that they are sensitive to the vehicle and not to the penicillin. Approximately 1 per cent of patients will be denied penicillin therapy under this program.

Adapted from *New England Journal of Medicine* 257:452 (Sept. 5) 1957.

**BUY
SECURITY
BONDS**

Contra- Angles



Hambly on Collections

Some of the friends and admirers of Doctor Hambly have missed his homely and often corny philosophy of dental practice. From time to time we publish excerpts from the turn-of-the-century "dental economics" teacher. When you read his sermonettes you can picture the "dental parlor" where he worked: the foot engine, the metal cuspidor without running water, the ornate instrument cabinet, the rigid and upholstered dental chair, the overpowering smell of beechwood creosote and oil of cloves.

In these days of some recession the thoughts of Doctor Hambly on matters of extending credit and of collecting accounts are as pertinent as they were in the Gay Nineties:

"When patients ask how much their bills are, or how much they are indebted for this or that service, always reply with courteous promptness and decision, 'five dollars,' or 'ten dollars,' or 'fifty cents,' or whatever else the amount may be, large or small; and if you are careful to avoid prefacing or following this reply with other words, most people will in the embarrassment of the moment proceed to pay without objection; whereas if you add more words it will weaken your claim in their minds, or impress them with the belief that you have no settled charge, and will furnish them with a pretext to show surprise or contend for a reduction. When one does demur at the amount, show your amazement and be prepared at once to defend or explain the justice of the charge.

"Take your fees for honest service whenever tendered. Patients will often ask: 'Doctor, when shall I pay you?' or 'Shall I pay you now?' A good plan is to answer promptly: 'Well, I take money whenever I can get it; if

FREE TRIAL OFFER

Learn why thousands of dentists now use this soft, flexible rubber polisher. Cleans or polishes rapidly and efficiently, yet is so gentle, patients feel safe and comfortable. Spreads in use reaching under the free margin of the gums and most of the proximal surfaces.

Write today for free sample.

Young Dental Mfg. Co.
St. Louis 8, Mo.



BS POLISHERS

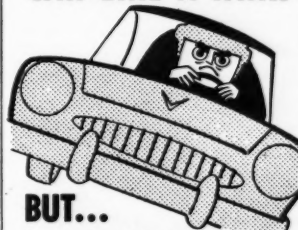
*Kids
love it!*

The Castle That Was Destroyed is a colorful folder about dental health. Kids love it. And before they know it, they learn easy-to-remember dental truths. And some of them carry the word to other kids, and to parents, too. Price, 100 for \$15.

DENTAL DIGEST

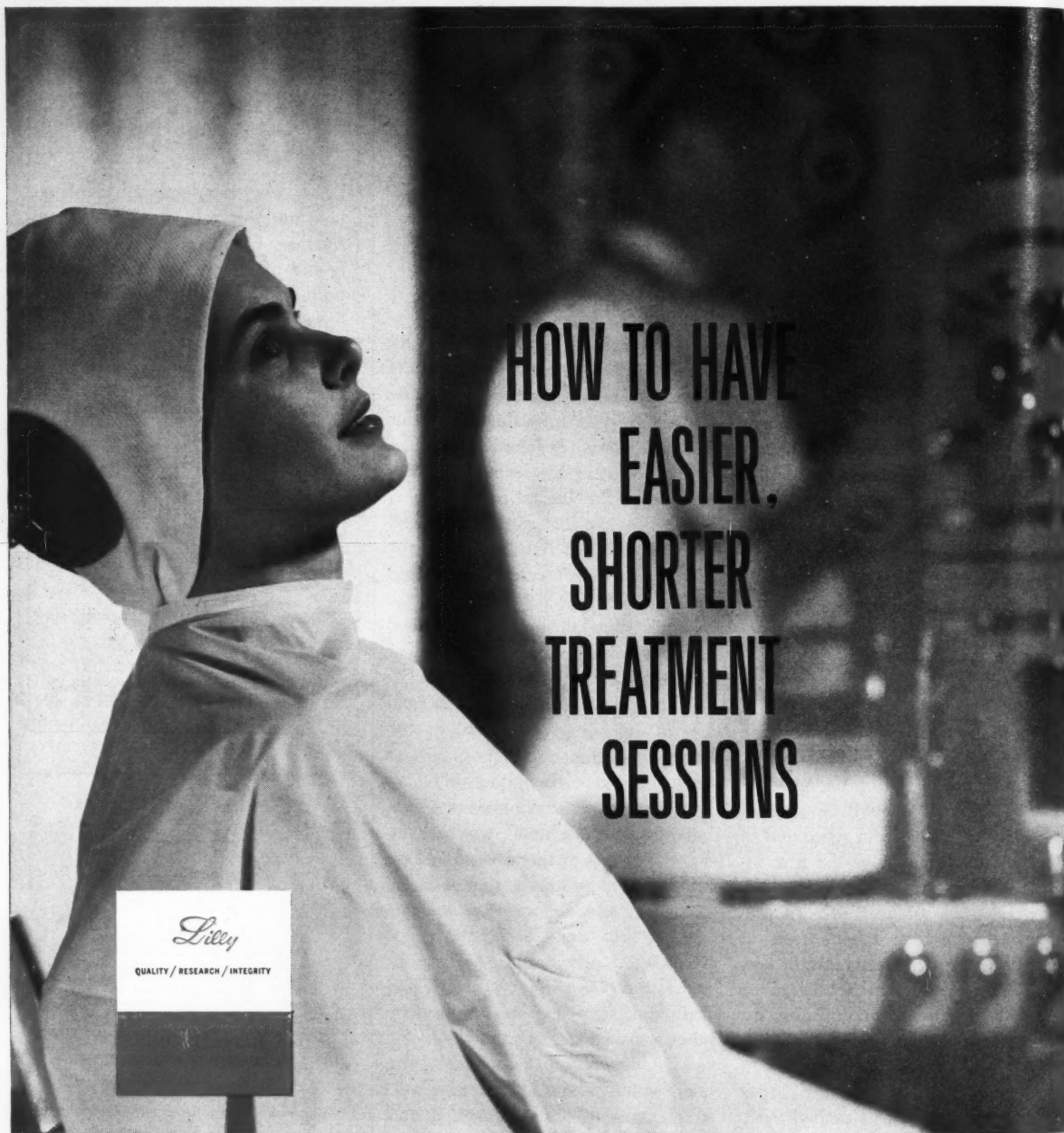
1005 Liberty Ave., Pittsburgh 22, Pa.

**DON'T DRIVE YOUR
CAR LIKE A TANK**



BUT...

If you want to drive a tank join the
NATIONAL GUARD



HOW TO HAVE EASIER, SHORTER TREATMENT SESSIONS



"excellent results in 200 patients studied..."¹

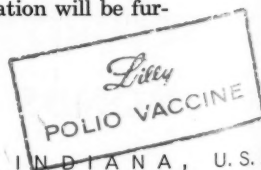
Simply administer one 'Valmid'* tablet to each patient 15 to 30 minutes prior to treatment. Patients quickly become more relaxed, acquiescent, and co-operative by virtue of the fast, safe sedation of nonbarbiturate 'Valmid.' Because of its very short action, patients leave your office free from the usual depression and "hang-over."

*'Valmid' (Elthinate, Lilly)

You can make your practice easier by using 'Valmid' routinely. This method proved to be "of major help" in 80 percent of patients in clinical study.¹

Tablets 'Valmid,' 0.5 Gm. (7 1/2 grains), are available at your local pharmacy in bottles of 100. Further information will be furnished gladly on request.

1. Ping, R. S.: J. Indiana Dent. A., 35:9, 1956.



ELI LILLY AND COMPANY • INDIANAPOLIS 6, INDIANA, U.S.A.

you have it you may pay now, as it will leave no bones to pick'; or, 'Short payments make long friends'; or, 'Prompt pay is double pay, and causes the dentist to think more of his patients,' or something to that effect. Never give such answers as 'Oh, any time will do,' or 'It makes no difference when,' or you will soon find it to be very expensive modesty."

On matters of contributions, and this was before such expenditures were deductible from income tax (in fact, when our friend was writing his advice to dentists there was no income tax) Hambly urges dentists to give cheerfully and in generous spirit:

"Dental practices, with very few exceptions, depend for patronage, as do medical practices, upon a mixed constituency. People of every grade are attracted to this dentist or that one by belief in his superior ability, and not for the possession of any traits of bearing, or other attributes that do not form a part of his professional learning.

"When boys or young men come to you for assistance for their baseball clubs, or their library, and the like, give something and give it freely, and without the slightest evidence of a dislike to do so. Be cheerful in making the subscription. If a little boy or girl comes to sell a concert ticket, buy it laughingly. If ladies ask you for a donation to aid the heathen or to help buy a carpet for their church, for the relief of someone afflicted, or to take space in the programme for their church entertainment, be sure to give willingly; for contributions of this sort not only do good to others, but often prove to be a judicious professional investment for self. Were you to growl and, with lengthened visage, say 'No!' all would unite in calling you 'Old Stingy!' and ever after avoid you."

Your Hobby Gives You Away

We are told that everybody should have a hobby. Just why no one has explained clearly. We have all seen people who let their hobby dominate their life and allowed them little time to work at making a living. A hobby-

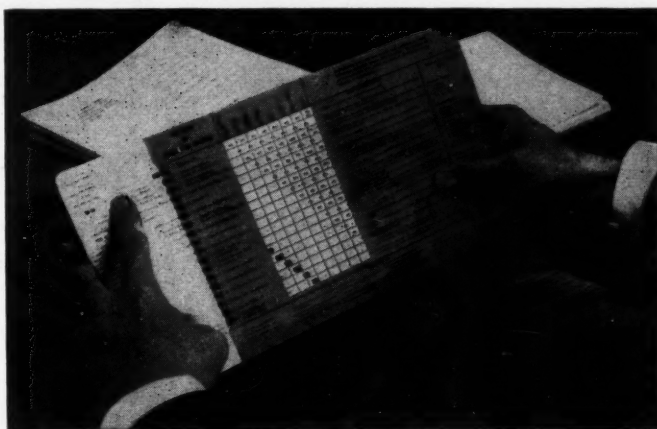
ist may also be a deadly bore to everybody who does not share his interest.

In one of those "How to———" books O. A. Battista suggests that hobbies and sports may fulfill the creative urge (painting, carpentry, writing); express the aggressive urge (tennis, fencing, badminton); show the urge to dominate (mountain climbing, sailing, skiing); satisfy the desire to hoard (stamps, coins, or record collecting).

The person who has too many

hobbies is probably confused and attempting to "let off steam" and pour out his frustrations in too many places. The one who has no hobby may be so well integrated that he needs no safety-valves for his psyche.

There is no reason to feel guilt stricken if you do not have a hobby. There is no reason why one should grit his teeth and go out in search of a hobby. If it doesn't come naturally and spontaneously it becomes another chore rather than a pleasure. The fellow who frets over his golf game or



Would YOU be a good PRESIDENT of your service club . . . your lodge . . . or any other business or social organization?

If you are a president you should know parliamentary facts. Learn the Parliamentary Rules the easy way from a slide rule that shows *at a glance* the 36 most common motions—when they are in order, if they need a second, the vote required, if they are debatable, if they may be reconsidered or renewed, if you may interrupt a speaker, when you must be recognized by the chairman.

PAN-L-VIEW is a slide rule in a transparent plastic case that shows clearly the Yes and No answers for every regular motion.

Based on *Robert's Rules of Order Revised*

A MUST FOR ALL CHAIRMEN: A HELP TO ALL MEMBERS

Approved by professional parliamentarians and teachers of parliamentary law

PAN-L-VIEW, 708 Church Street, Evanston, Illinois

☐ Send me a PAN-L-VIEW Slide Rule on Parliamentary Procedure in Three-Color Vinylite plastic. Size 12x6 $\frac{3}{8}$ inches.

☐ Enclosed is my check for \$3.00.

Name: _____ Address: _____

City: _____ Zone: _____ State: _____



Titles of Slides

1. Dental Conditions
2. The Progress of Tooth Decay
3. Pyorrhea Treated or Neglected
4. What Does An X-Ray Show?
5. "Things Are Not Always What They Seem . . ."
6. The Requirements of a Correct Restoration
7. Insulation
8. How Irregularities of the Teeth Affect the Face
9. How the Loss of Teeth Affects the Face
10. The Collapsed Face
11. The Action of Local Anesthesia
12. Why Construct a Bridge?
13. The Danger From the Impacted Tooth
14. The Circulation of the Blood
15. "One Rotten Apple Can Spoil a Bushel"
16. "A Little Neglect May Breed Mischief"

KODACHROME *Slides*

... ideal for patient-education and lecture purposes

Our files contain many interesting letters from dentists who are using these standard 2" x 2" KODACHROMES in various ways in their practices. Here is an excerpt from one of the letters: "I have received my package of KODACHROME slides and lecture material today and needless to say I think it's wonderful."—A. R., New York.

You, too, will quickly recognize the value of these slides and lecture material which is ideal for use in all types of patient-education programs and in talks given before lay groups. There are 16 slides—reproductions from 16 of the most useful charts in the ever-popular series entitled *Visual Education in Dentistry*.

The titles of the slides are outlined in the above illustration. A quick glance at them will enable you to visualize the potential value of the material in your practice. The slides fit any standard projector and the price, including appropriate lecture material, is only \$18.

We feel that you will find the KODACHROME slides most effective for use at the chair, in explaining dental conditions to patients in language they understand. In addition, the slides are proving to be invaluable to dental societies, dental instructors, and clinicians. The coupon is for your convenience in obtaining your set now.

Dental Digest, 1005 Liberty Ave., Pittsburgh 22, Pa.

☐ Here is my check in amount of \$18. Please send the 16 KODACHROME slides and lecture material promptly.

☐ Bill my dealer.

Dr. _____

Address _____

City _____

Dealer _____

worries that his stamp collection is short a scarce piece is letting his hobby disturb him rather than relax him. A hobby should be recreational rather than vocational. When it becomes vocational the hobbyist becomes a professional. When he loses his amateur — for the love of it — standing it is no longer a hobby. It is then another job.

Emotional Boundaries

How many of us know "where he leaves off and where someone else begins?" That is a question asked by a physician in the *Journal of the American Medical Association*.

It is admirable to be sympathetic. There are hazards, however. "When one is sympathetic, he does not remember his own boundaries, for sympathy means the act or capacity of entering or sharing the feelings of another and becoming similarly affected."

We have all seen people who became so submerged in sympathy that they were unable to help the person who was in actual trouble. In an emergency too much sympathy may paralyze the skill to be of help. For example, the person trapped in a burning building needs help. He does not need the hysterics of a bystander who identifies himself with the distress and acts as if he were actually in the fire himself. The person who comes to the rescue, the only one who can do any actual good, sees the peril, acts on it, but does not identify himself directly with the experience. "Keeping cool" means keeping detached and preserving one's separateness.

In contrast to *sympathy* the emotion of *empathy* is the more admirable and helpful, according to Dr. Aring. "Empathy means putting oneself in another's place and understanding the situation but always maintaining an awareness of one's separateness."

Do these definitions apply to dentists and dental practice? Yes, they apply to every human being. They apply particularly to those people who treat other human beings for diseases of the spirit, the mind, the body: the inseparable trinity.

The dentist, the physician, the nurse can better treat people when he experiences *empathy* rather than *sympathy*. Judgments and skills may be clouded if we are too sympathetic. When we experience empathy we still

have the warmth of human understanding, the ability to place oneself in the other's position. But by retaining our detachment we are able to *think and act* more clearly and more effectively. E.J.R.

CLINICAL AND LABORATORY SUGGESTIONS

(See pages 354 and 355)

Form to be Used by Contributors

To: Clinical and Laboratory Suggestions Editor

DENTAL DIGEST
708 Church Street
Evanston, Illinois

From: _____

Subject: _____

Explanation of Procedure:

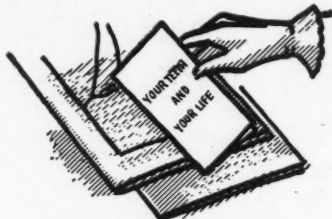
Sketch:

Suggestions submitted cannot be acknowledged or returned.
\$10 will be paid on publication for each suggestion that is used.

1,000

copies of YOUR TEETH AND YOUR LIFE

**only
\$36.**



**only
\$36.**

RECEPTION ROOM USE

Here is an opportunity of obtaining not only ethical but also ideal material for use in your patient-education program. One thousand copies of "Your Teeth and Your Life" could easily take care of all your requirements for the next several months. And the cost is only \$36.

There are ten two-color charts in "Your Teeth and Your Life" which tell in an easily understood manner the wisdom of periodic dental care and the danger of neglect.

The pamphlet can be used in five different ways: (1) distribution to patients upon dismissal; (2) reception room reading; (3) monthly statement enclosure; (4) distribution during talks before Parent-Teacher groups; (5) enclosure with patient-recall cards. It is wonderfully effective in any of these uses.

The coupon is for your convenience. Order your copies now for immediate delivery.

Dental Digest, 1005 Liberty Ave., Pittsburgh 22, Pa.

- ☐ Please send me 1000 copies of "Your Teeth and Your Life" immediately. I enclose \$36, or ☐ bill my dealer.
- ☐ Please send me 100 copies of "Your Teeth and Your Life" for which I enclose \$4. Or ☐ bill my dealer.

Dr. _____
Address _____
City _____
Dealer _____

See second cover D.D.8
UNIVERSAL DENTAL CO.
48TH AT BROWN STS., PHILADELPHIA 39, PA.
Please send Univac information.

Dr. _____
Address _____
City _____

See page 334 D.D.8
CAVITRON EQUIPMENT CORP.
42-26 28TH ST.
LONG ISLAND CITY 1, N. Y.

Please send details about Portable Prophylaxis Unit.

Dr. _____
Address _____
City _____

See page 335 D.D.8
ASTRA PHARMACEUTICAL PRODUCTS, INC.
WORCESTER 6, MASS.
Please send information on Xylacaine HCL.

Dr. _____
Address _____
City _____

See page 336 D.D.8
PETER STRONG AND CO., INC.
207 E. 37TH ST., NEW YORK, 16, N.Y.

Please send further information about the Benzodent Treatment.

Dr. _____
Address _____
City _____

See page 336 D.D.8
PETER STRONG AND CO., INC.
207 E. 37TH ST., NEW YORK 16, N.Y.
Please send further information about Laclede odor control.

Dr. _____
Address _____
City _____

See page 358 D.D.8
THE S. S. WHITE DENTAL MFG. CO.
PHILADELPHIA 5, PA.
Please send information about Airotor.

Dr. _____
Address _____
City _____

See page 359 D.D.8
ASTRA PHARMACEUTICAL PRODUCTS, INC.
WORCESTER 6, MASS.
Please send information on Xylacaine Viscous.

Dr. _____
Address _____
City _____

See page 361 D.D.8
YOUNG DENTAL MFG. CO.
ST. LOUIS 8, MO.
Please send free BS Polisher.

Dr. _____
Address _____
City _____

See page 362 D.D.8
ELI LILLY & CO.
INDIANAPOLIS 6, IND.
Please send free information on Valmid.

Dr. _____
Address _____
City _____

See third cover D.D.8
COOK-WAITE LABORATORIES, INC.
1450 BROADWAY, NEW YORK 18, N. Y.
Please send information concerning Improved Ravocaine and Novocain.

Dr. _____
Address _____
City _____

See fourth cover D.D.8
THE DENTISTS' SUPPLY CO.
YORK, PA.
Please send Trubyte Bioform information.

Dr. _____
Address _____
City _____